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THINGS MISSED *and* OTHER THINGS—I

BY H. VAN BUREN MAGONIGLE, F. A. I. A.

Illustrated by water color drawings, sketches and photographs by the Author

THE French have the faculty of interesting themselves in their sensations, watching their minds and emotions at work, in an enviable detachment. Emulating this detachment if not entirely achieving it, a mature American finds an interest when revisiting lands and cities known long ago and loved, in confronting his own reactions, in noting his present attitude toward the things he once cared about so passionately or at which he turned up the lofty, contemptuous nose of the cocksure twenties.

H. VAN BUREN MAGONIGLE, F.A.I.A.

Then architecture was all in all save for the Italian Primitives, the sculptures of the Golden Age of Athens and of the Cinque Cento. And that architecture must be *pure*—none of your fancy touches such as Michael Angelo indulged in with that inveterate disposition of his to think and see and do as seemed to him good, without reference to accepted canons; usually to the distaste of youth, and a good thing too! Angelo is strong meat for babes and sucklings.

Was the result narrowness or concentration? A complacent egotism would choose the latter suggestion as more soothing to vanity. Well, we spend our youth in narrow and burning enthusiasms, in tearing off on false scents, in rediscovering a world that thousands of eager-nosed young gentlemen have likewise insisted upon discovering for themselves and yet—and this is one of the joys of life—left in a dewy freshness for us when we should come; which we in our turn will be unable to stale for our successors simply because they won't believe our reports, and it is well they should not.

In maturer years we care so much more for scale than for dimension, for character than for period, for the third dimension than for mere elevation, for materials and their treatment, for surfaces and all the evidences of craftsmanship than for architectural draftsmanship. Of course it is because we have passed the time of life when a scale or a foot-rule was constantly in our hands as the natural means of translating what we saw back on to paper, in the flat, where we were used to judging things; when, in effect, but unconsciously, we were using them as aids to the learning of something about scale, character, the third dimension. We are haunted now by a guilty feeling that we have grown lazy or lost our enthusiasms because we are not irresistibly impelled to sketch and measure a hundred precious things as once we were, when, in truth, we have merely

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moved to another point of view. As we look back upon those days as well as we can through the veil of years, it would seem as though we were obsessed by a search for form, for form above all; and as though the subtler things that give character, such as color and texture and that indefinable, indescribable spirit the craftsman bestows upon the work of his hands and leaves as our most precious legacy, had in great measure escaped us.

Maturity cares more for the human things youth hurries past in youth's preoccupation; for the aspect of new skies; for the color of the light; for the landscapes that once meant almost regrettable interruptions of our eager flight from one "good architectural town" to another—that now we find are good in so many other ways—and which now make beautiful links between the old cities like the modulation of one musical motif into another, and which we savor as lovely interludes. But all the time, under the breathless search for that which youth went forth to find and pursued with an ardor that is like nothing on earth so much as the mad ecstasy with which a bee rifles a flower oblivious of the world about her—under all this obsession the subconsciousness was quietly storing away a thousand impressions, sounds, sights, scents, to lie dormant until awakened by some touch upon the chords of memory.

THE RIALTO BRIDGE

(From the water color by H. Van Buren Magonigle)

To each man his own experience. Maturity need not regret the intensity of youth's concentration no matter how narrow it was; the great thing was to experience, to feel deeply; architecture was what he cared most for, it was what he went "for to admire and for to see;" and perched on a ladder in Athens or swung in a scaffold on the façade of the Palace of the Doges many beautiful things passed unheeded; the subconscious had not been discovered in those days; yet thanks to that silent busy friend, let the right string vibrate and he remembers the poppy that nodded like a fleck of fire against the blue that arches over the City of the Violet Crown, high on a broken entablature of the Erechtheion; the breeze that used to spring up about ten o'clock of a morning of early Summer and bowed the grasses between the fallen marbles; the blue of Lake Nemi; the thunderous mist that filled the wood beside the waterfall at Tivoli; the roses that bloomed in December in the Villa d'Este and, from the terrace, the cloud shadows turning the tawny vineyards to purple as they drifted out over the Campagna before a breeze that made the olive orchards flash from gray-green to silver as its cool hand ruffled the leaves.

Maturity's consolation for missing things in youth is that there is just so much more to see and do, to feel with a different but not diminished intensity, now, when we come again.

Tea in Old Chelsea

A September afternoon, the yellowing leaves drifting softly down in the still air, neat doorways and their gleaming brasses, an atmosphere of leisure and peaceful ease—hard to reconcile with the echoes of old contentions that come to mind in these haunts of the spirited Butterfly, Battersea Bridge, The Reach, Cheyne Walk, Cheyne Row, the White House—an atmosphere strongly reminiscent of Greenwich Village before the Villagers came, and of our own Chelsea of forty years ago.

Tea time approaches. The Sign of the Blue Perrokeet attracts us and we enter and command refreshment. Tea is so intimately connected with England, it is so much an institution like the

THE RIALTO BRIDGE

(From a photograph by H. Van Buren Magonigle)

Woolsack and the Crown that we almost end by thinking the herb indigenous, just as we link the banana and the peanut with Italy and the Italians; and we think of drinking tea anywhere in England as one does of nectar on Olympus. He who would preserve his illusions should avoid the Blue Perrokeet. There is in Nova Scotia a decoction known as teapot-tea; the pot stands stewing all day and all night on the back of the stove, and recourse to it is frequent. Water is added

"The Woman Tempted Me, and . . "

It cannot be denied that there are mosquitoes in Venice. To call them *zinzari* is but to blink the issue. And they will bite if not discouraged. This may be accomplished in two ways: by burning certain pastilles which utter vast volumes of smoke under whose impenetrable screen you creep into bed and get to sleep before they know it; and by anointing yourself with liquids more

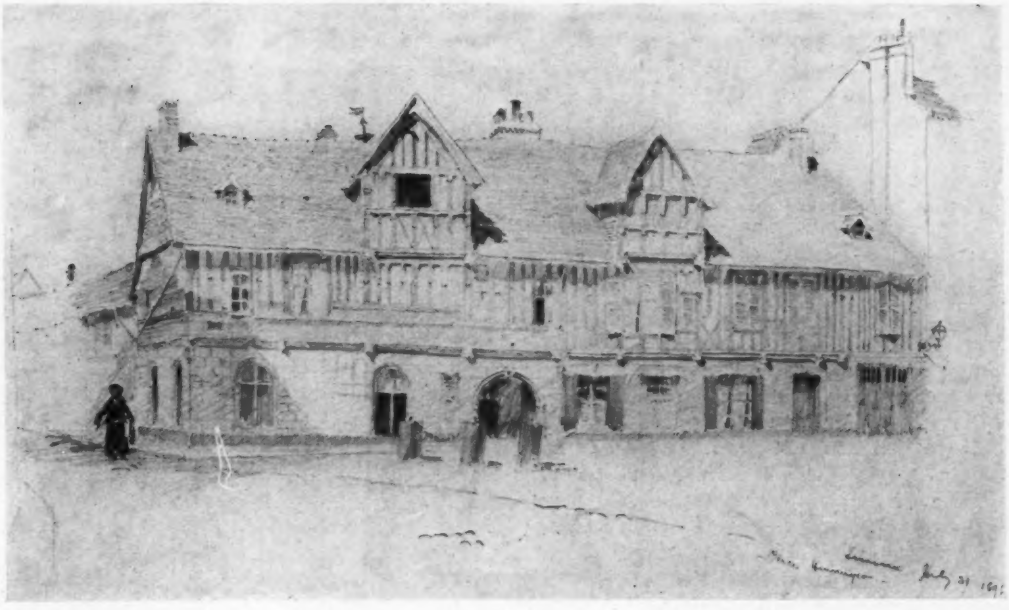
BELLAGIO

and more tea as the brew is drawn off; every so often they have to take out some of the old tea leaves to make room. As may be believed, a strong man's drink. A hardy race, the Bluenoses! After partaking of the infusion offered us at the Blue Perrokeet it required no argument to persuade us that the sign should exhibit a Nose, not a Bird.

So much for tea. As for the crumpets, ordered for their brown, crisp sound—but perhaps the veil of reticence would best be drawn over the crumpets. We go forth into the mellow September sunshine. We have had tea in Old Chelsea.

or less evil-smelling, supposed to be repugnant to them and unquestionably so to man. We tried both methods and thus acquired bottles to add to the increasing mass of luggage we accompanied about Europe.

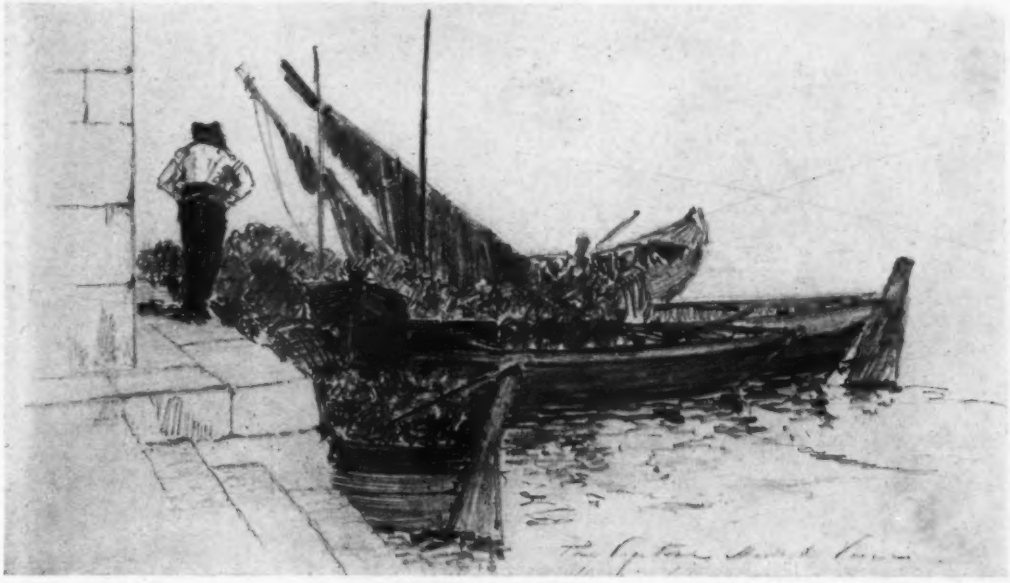
One Sunday, in Milan, to speak in architectural terms there was something quaint about my interior, and an expedition in quest of a drug store ensued. Visiting one after another and finding them closed we inquired of a municipal guard who looked upon us with smiling pity and said that it was against the law for drug stores to be open on Sunday. We asked him if it was



LISIEUX

also against the law to be ill on Sunday, whereupon he became stern, even minatory, and we quietly departed before he had time to look up the ordinance in his little book and find it was his duty to lock us up. Further wandering brought us to a place that looked like a cross between a barber shop without the barbers and a grocery store without groceries, but which we were assured by vastly interested bystanders was a pharmacy; being open, it was evidently operated by a humanitarian in defiance of the statute.

Paregoric is a word that ought to be in all the phrase books; nor is it included in the curriculum of the Berlitz School of Languages—the only defect I have ever noted in that admirable system. The fluid dispensed over that strange bare counter



VENICE

(From the water color sketch by H. Van Buren Magonigle)

smelt as no paregoric ever smelt before, but I assumed that it was probably smelling in Italian. It had one paregorical characteristic, shared with its cousins absinthe and mastika; it turned milky white when dropped into water, and like them too it had a cheering effect upon an interior comparable to that of a rosy lamp shade.

We are in London. Again feeling the need of cheering up, I inquire whether the paregoric we bought in Milan is still with us. A bottle is produced and handed to me instanter; I quickly empty the contents into a glass of water, it turns milky white, and I toss it off! . . . The *bouquet* doesn't seem quite right somehow and the longer it lingers on the palate the less it reminds me of paregoric. I seize and smell the glass, the bottle. Where have I known that odor? I seem to hear the whir of wings! Can this be death! Assuming a bold accusatory mien I demand, "What was in that bottle you gave me?" "I don't know! Didn't you look at it before you drank it? Let me see it! Good Heaven!! *It's the Mosquito Lotion!!!* Quick, to the drug store!" I leave rapidly and seek the chemist, approaching the clerk with an air as who should say, *"Ave!* chemist, one who is about to die salutes you." Handing him the bottle I say "I have just swallowed the contents. Will I die here or have I time to get back to The Rubens?" The eye of that young chemist lights up. Stomach pumps are in that gleam. He applies the bottle to his nose with the professional touch that is the despair of the laity, shakes his head, tries the other nostril. "It isn't corrosive sublimate," he says. I expel a long-held breath, he takes another sniff and smiles a slow smile. "I think you'll 'ave time to die where you like, sir. Citronella, that's wot. Feel a bit queer, sir?" I reply with the dignity proper to one seeing the prestige of a desperate case slipping from him, that I do. "If you feel worse sir, come back and we'll see wot we can do for you sir. Thenk-you-sir."

I retire and when I reach the hotel I am greeted as one is welcomed back from the dead before the novelty has worn off.

But I know now why Adam spoke as he did to God about the apple that was handed to him. And I think I know why mosquitoes seem to avoid me.

This is the first of two articles by Mr. Magonigle. The second will appear in the succeeding issue.

PUNTA BALBIENELLO

From the loggia, perched high on this wooded promontory, one may see up and down Lake Como. The view is not exceeded in picturesque beauty by any in Europe. This beautifully located loggia is now the property of General Ames, of Boston

The BUFFALO ATHLETIC CLUB, BUFFALO, N. Y.

EDWARD B. GREEN & SONS, Architects

THE Buffalo Athletic Club is an outgrowth of the old Ellicott Club of Buffalo. The property of the present club is actually owned by the Ellicott Club Association made up of the original Ellicott Club members and others.

Before the site was selected, the architects were instructed to draw up sketches of a building to house a membership of twenty-five hundred, on four different sites—the total cost, including lot and equipment, not to exceed two million dollars — and, from these sketches, the possibilities of each site were carefully studied and the present site, open on three sides and facing on Niagara Square, was selected. A campaign was then organized and the money raised through the sale of a thousand one thousand dollar certificates.

FIREPLACE IN BILLIARD ROOM

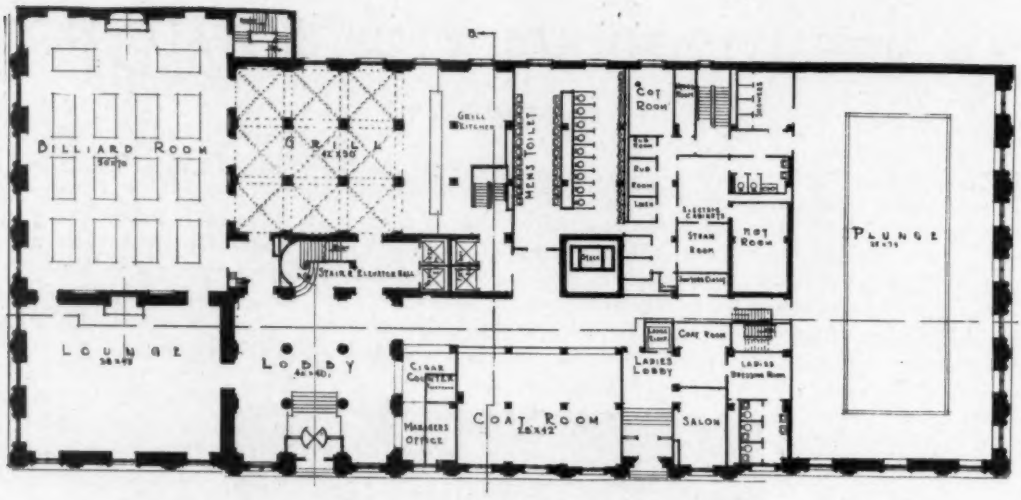
The building faces Niagara Square, the hub of Buffalo, which soon will become the City's Civic Center. Opposite on the other side of the square is the new Statler Hotel. On the West the club faces Delaware Avenue, one of Buffalo's main thoroughfares, and on this side are located both the main entrance and the ladies' entrance. The South side faces Eagle Street opposite the City Hall. On the East side an alley has been kept open for the service entrance and delivery of coal.

The building is high in the center with two storied wings extending North and South, providing roof gardens opening out from the game room floor. The wings provide high rooms with clear spans of fifty feet. The exterior of the building has a granite base and is faced above with red tapestry brick laid up with white Portland cement mortar. The exterior trim is Indiana limestone.

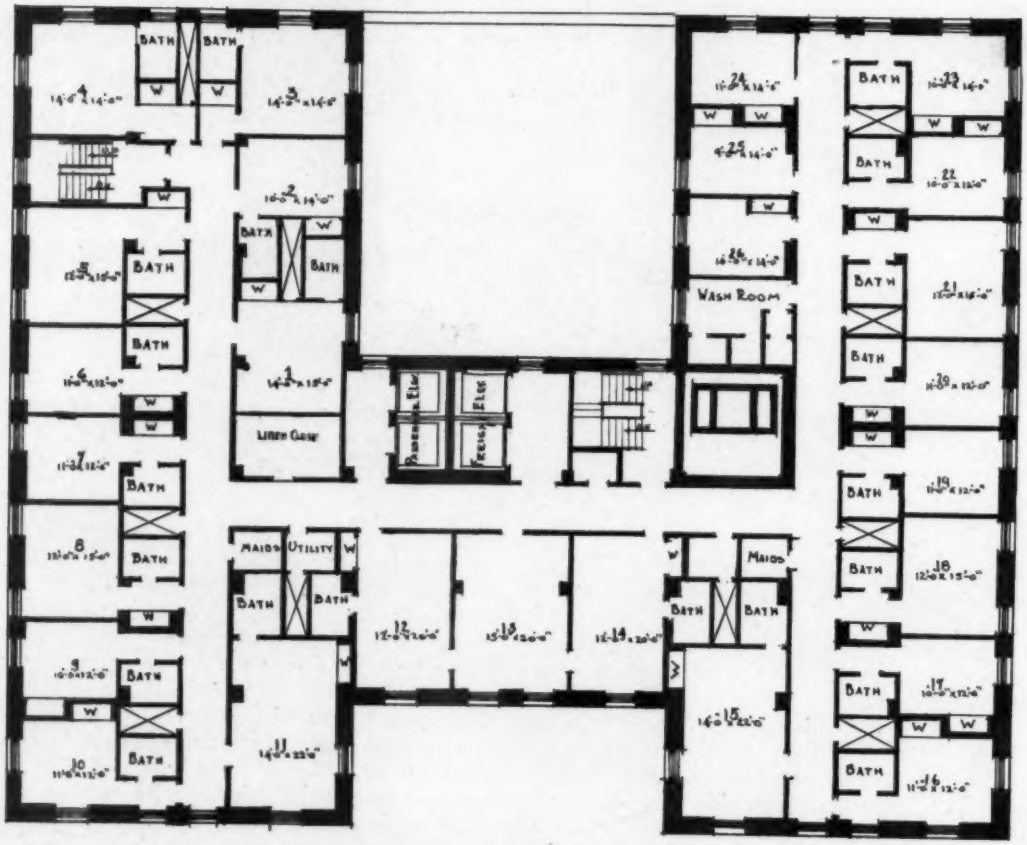
The lobby is a room with Indiana limestone columns and pilasters and a coffered wood ceiling decorated in chrome colors. The floor is marble laid in a black and green pattern. The walls are painted in a Spanish leather effect.

On one hand are located the office desk and the cigar counter. Large coat room facilities are provided just beyond. Opposite the door is the main stair built of solid stone steps with wrought iron rail. To the North is an archway leading into the lounge, a corner room facing on the square. The panelling of this room is twelve feet high in walnut. The room is richly furnished and the panelling forms an ideal setting for the hanging of paintings.

Leading from either the lobby or the lounge is the billiard room, also facing on the square. The room has rough plastered walls toned down to a rich brown. The ceiling is flat with massive beams spanning its fifty feet of width and decorated in deep rich colors. The mantel is stone with some interesting carving. The floor is cork and the room accommodates fourteen billiard tables. Opening out of the billiard room through three large archways is the grill. This room is done in brick and stone. Stone columns support a vaulted ceiling. The ceiling starts at the spring of the arch with rich reds and greens and fades out at the top of the dome into a silver leaf background. The walls and arches are of a light, warm-colored brick laid up with random courses. The brick were especially selected from the culls to get a rough broken wall surface. The lighting fixtures represent ships and pirates in their design. The floor is laid in varicolored marble with random flag pattern.



MAIN FLOOR PLAN



TYPICAL BEDROOM FLOOR PLAN

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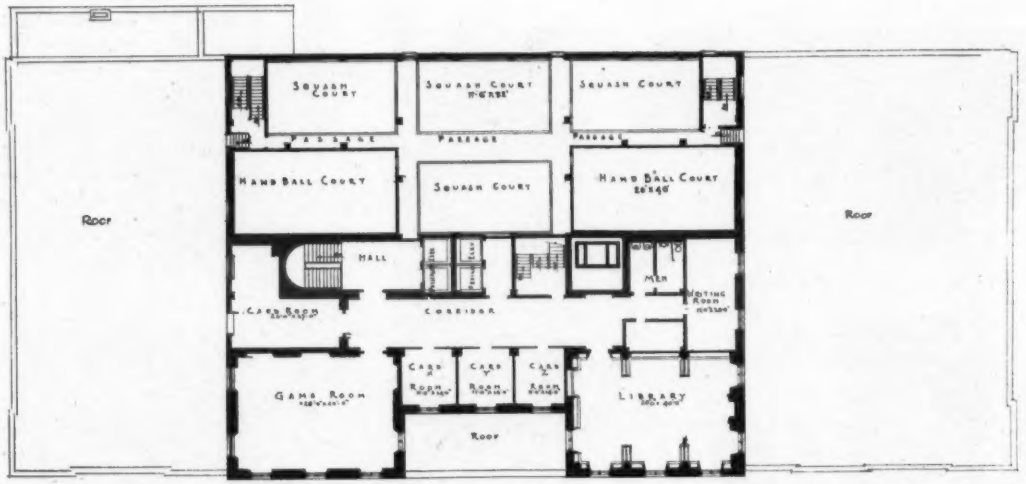

GAME ROOM FLOOR PLAN

The various games, social and athletic, are grouped on this floor

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BUFFALO ATHLETIC CLUB,
BUFFALO, N. Y.

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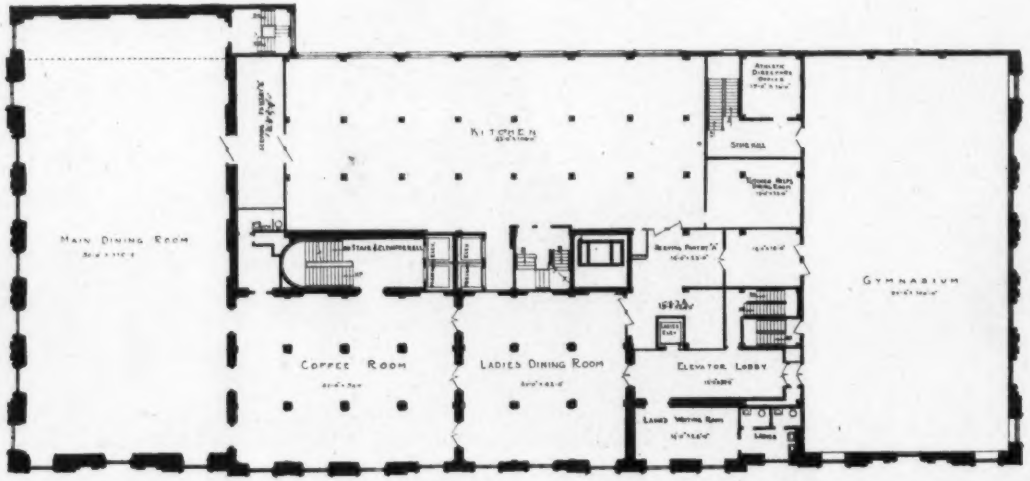

DINING ROOM FLOOR PLAN

The arrangement of this floor is very flexible. The main dining room is used for men only at luncheon, the ladies' dining room for women only. In the evening the main dining room is easily convertible into a ballroom, or in the case of a very large assembly, the gymnasium may be also used for dancing

In the South end of the building on the ground floor is located the swimming pool, 25 x 75—four feet deep at one end and nine feet at the other—in a room 50 x 100 with light on two sides. A balcony runs along one side and one end. With this balcony and the bleachers it is possible to seat between seven and eight hundred spectators at the swimming meets.

Off the pool room is a well appointed Turkish bath with ceramic floors and walls. On the mezzanine floor above are located the men's dressing room, basket room and barber shop. This mezzanine floor is midway between the levels of gymnasium and pool. Higher up in the building are located four squash and two handball courts and also an exercising room. The gymnasium has a running track in the balcony.

The ladies' department also has a dressing room and basket room located on the same mezzanine floor as the men's dressing room. They have their own Turkish bath, hair dressing parlors and manicure tables. This department connects with the gymnasium and the plunge by means of a separate stairway and is reached by a separate elevator running from the main entrance.

The floor above the lobby includes the main dining room, the coffee room, the ladies' dining room, the gymnasium, and the main kitchen. Serving rooms connect all these rooms with the main kitchen, making it possible to serve as many as two thousand people at one time on the same floor, thus reducing the cost of operation by the elimination of stairs and dumb-waiters between kitchen and dining rooms. All the dining room service is handled on this floor with the exception of the grill and the private dining room. Service is carried to these sections by means of a service stair and two service elevators, one of which is used exclusively for the transport of trucks, up and down. The arrangement of this floor is most flexible. For instance, the main dining room is used for men only at luncheon; the ladies' dining room for women only. In the evening, the main dining room is open to women also. Later on in the evening it may be used as a ballroom and supper is served in the ladies' dining room or, in the case of a standing supper or ball, the gymnasium may be used for dancing.

The main dining room, 50 x 110, extends along the whole North side of the building overlooking Niagara Square. It is a high room, with Eng-

LIBRARY

MAIN DINING ROOM

BUFFALO ATHLETIC CLUB, BUFFALO, N. Y.

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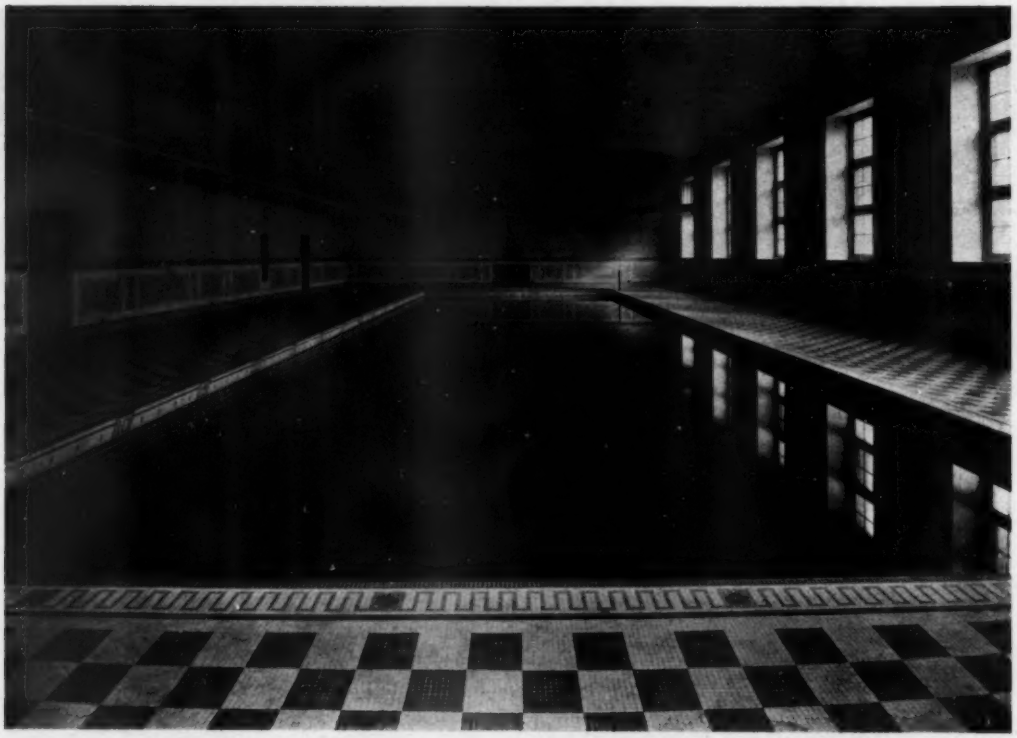

SWIMMING POOL

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LOBBY

BUFFALO ATHLETIC CLUB, BUFFALO, N. Y.

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lish panelling of antiqued oak, twelve feet high, and above the panelling, travertine laid in random ashlar. The oak ceiling is built up of beams with the carving gilded and glazed and parts of the ornament picked out in chrome colors. The space between the beams is filled with what appears to be old hand-mottled plaster, but which is really canvas stretched on frames and backed with acoustile. This makes the room particularly quiet and perfect for speech.

walnut and has a splendid view out over the Lake and Niagara River.

Above this floor occurs the pipe space directly below the bedrooms where all the plumbing from the floors above is collected. There is no concealed plumbing in the building as shafts have been provided everywhere so that the backs of all fixtures are accessible.

Above this pipe space are six floors of bedrooms totaling 163 in all, each with its own bath.

MAIN LOUNGE

The coffee room which is used by the members after luncheon and in the evening for after theatre dancing, is done in Indiana limestone.

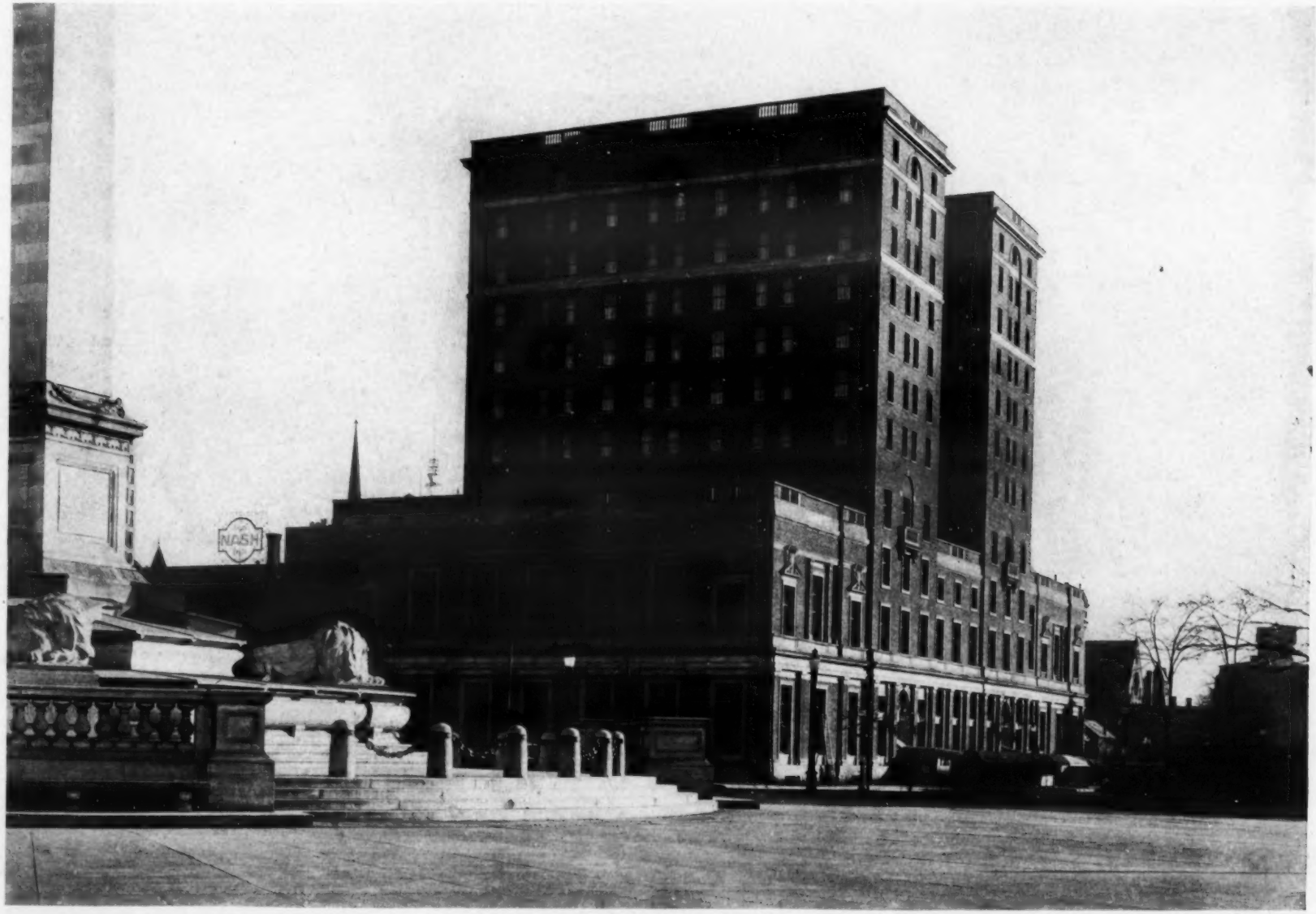
The ladies' dining room is Pompeian in design.

Above this floor are located eleven private dining rooms with folding partitions between them so that they may be thrown together if desired. This floor also contains a large serving room, the steward's store room and the help's cafeteria.

The next floor is called the game room floor. Here are located the card rooms, the writing room and the library. The library is finished in

The top floor is devoted to the administration offices, connecting with all parts of the club, by means of the telautograph pneumatic tubes and telephones. On this floor are also located the tailor shop, the printing office, the carpenter shop and rooms for a housekeeper and thirty resident maids.

In the basement are located the bowling alleys, the laundry, the bakery and locker room for more than 350 employees who make up the staff. The machine room and boiler room are in the center of the building and coal is delivered by trucks and dumped directly into the coal bins by means of the alley on the East.



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PRINCIPAL ENTRANCE

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LOBBY, LOOKING TOWARD LOUNGE

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XUM

LOUNGE, LOOKING TOWARD LOBBY

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MAIN DINING ROOM

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GRILL ROOM

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BILLIARD ROOM

COFFEE ROOM

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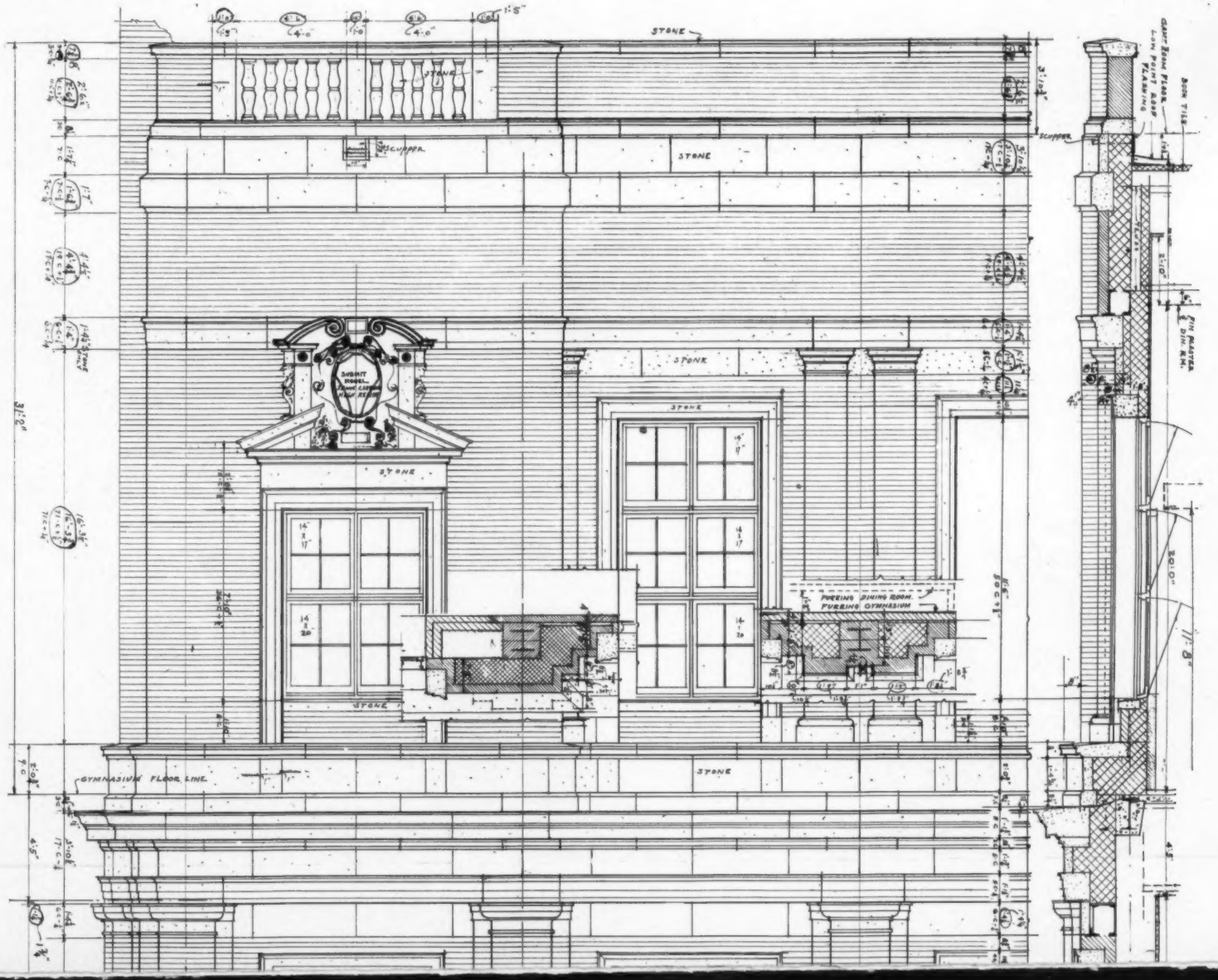
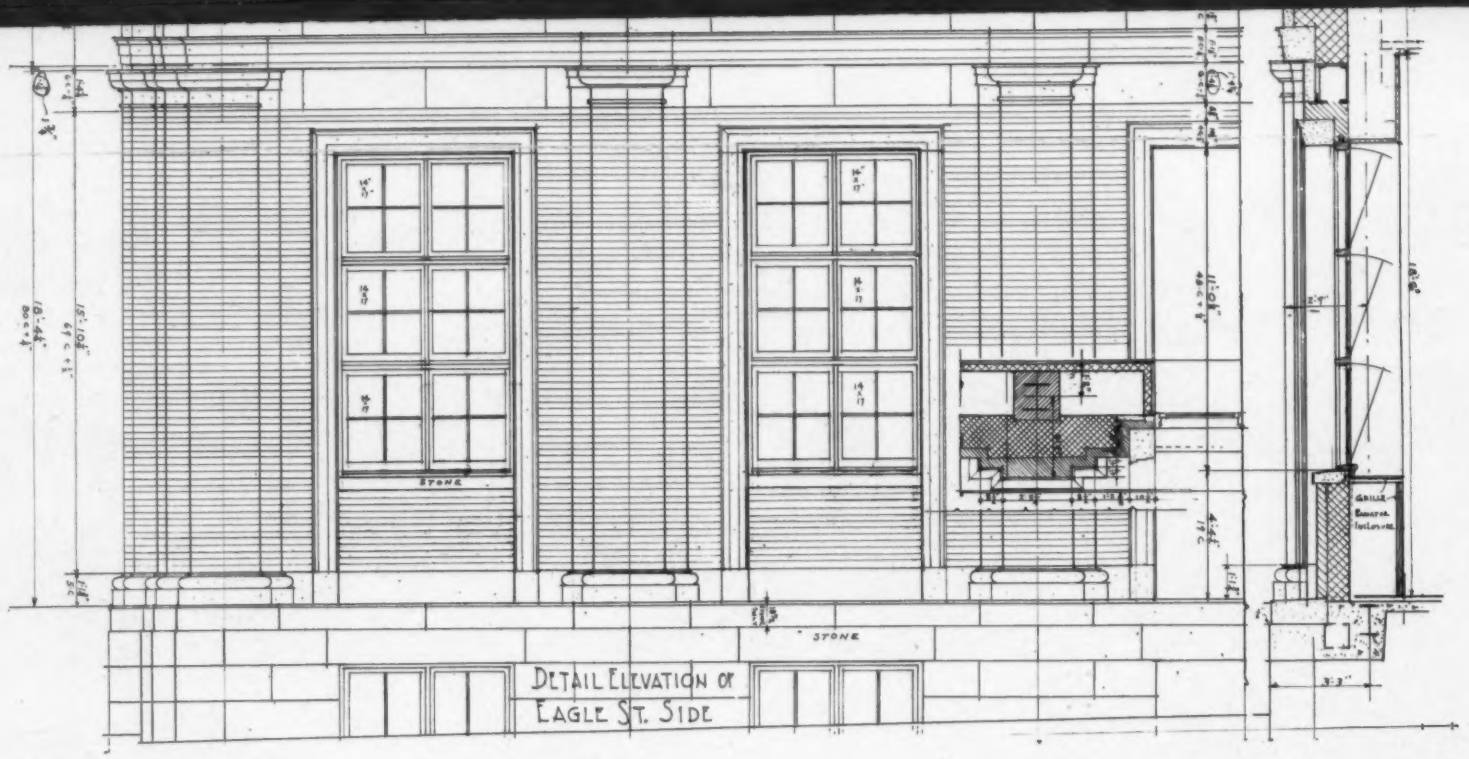
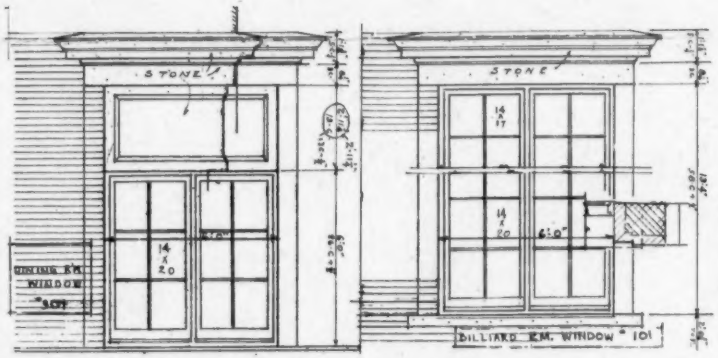
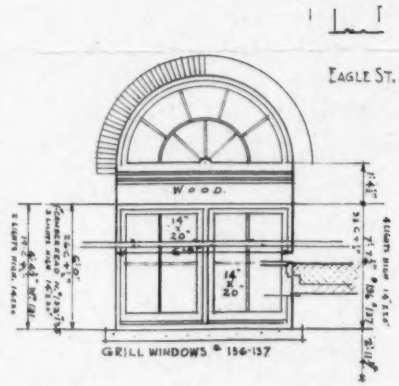




DETAIL ELEVATION OF EAGLE ST. SIDE





EAGLE ST. SECTION

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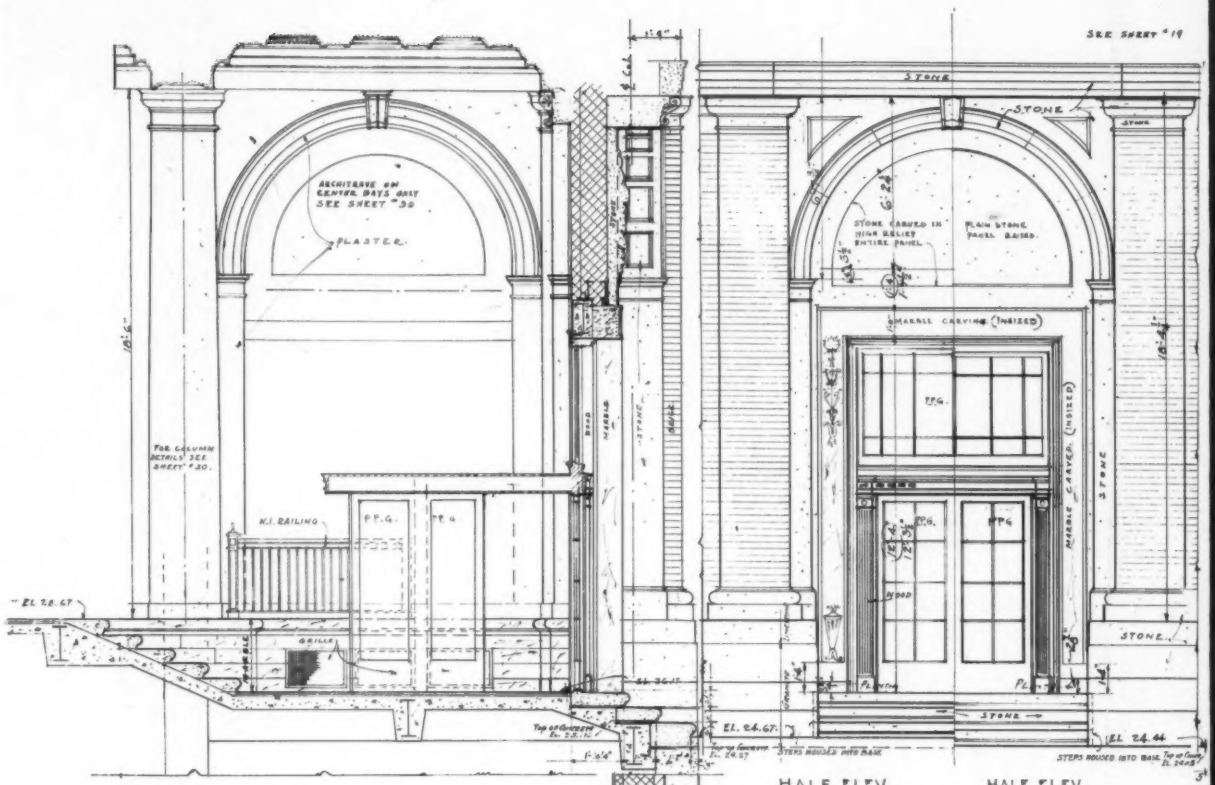
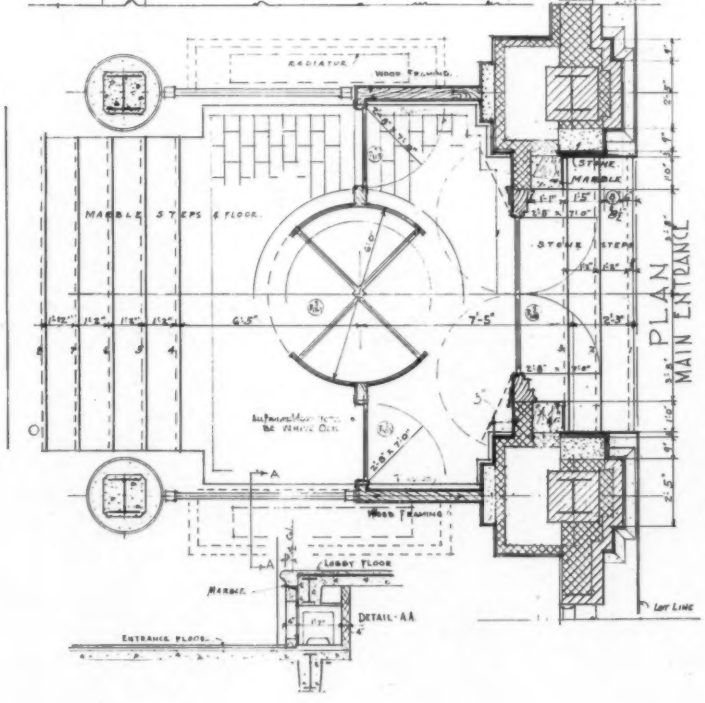
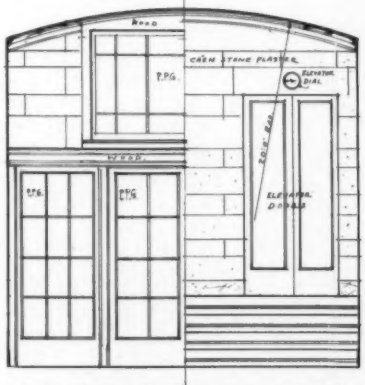
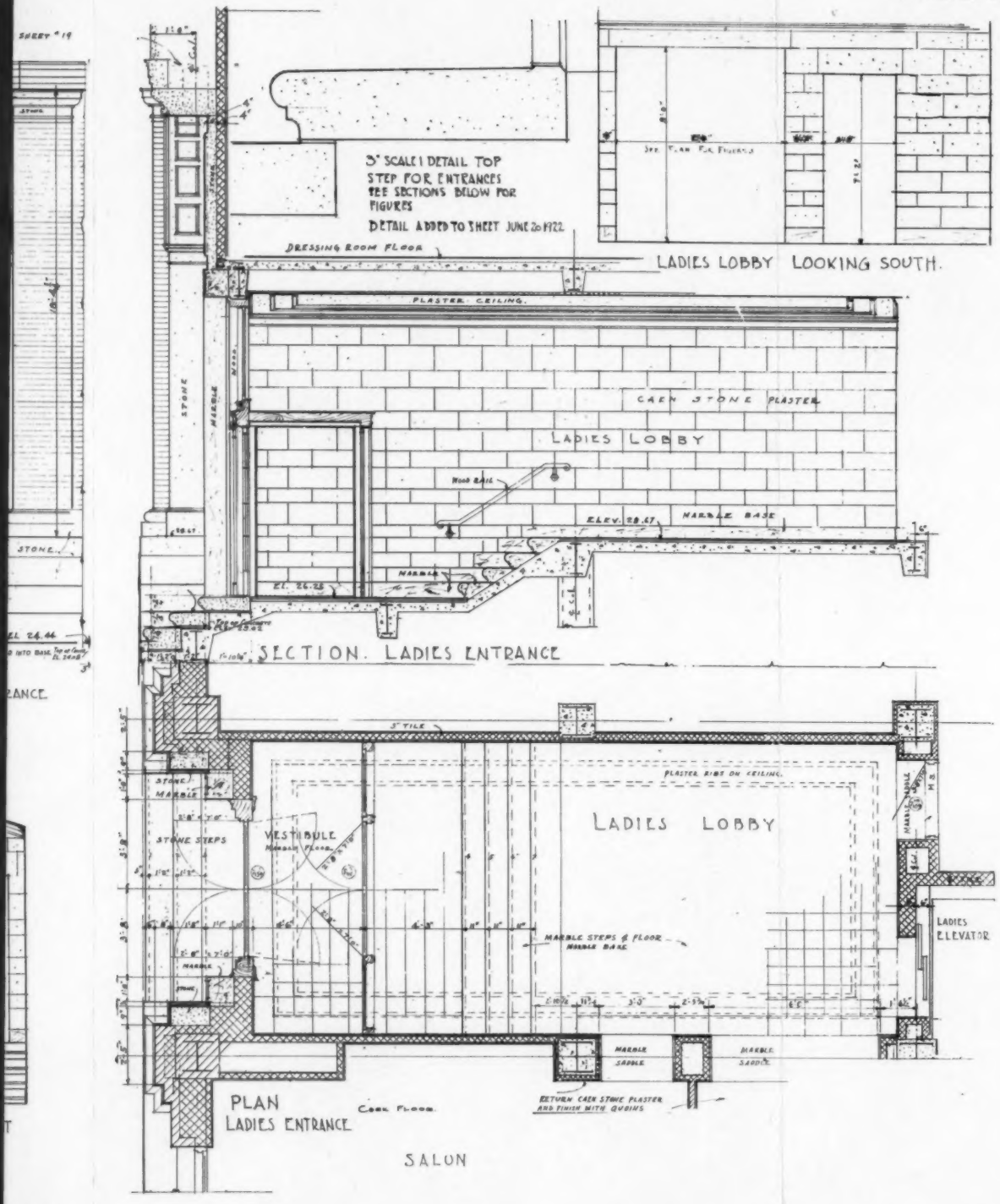






BUFFALO ATHLETIC CLUB,

EDWARD B. GREEN & SONS



TIC CLUB, BUFFALO, N. Y.

EN & SONS, ARCHITECTS

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NORTH WARD NATIONAL BANK, NEWARK, N. J.

GUILBERT & BETELLE, ARCHITECTS

THOMAS BRUCE BOYD, INC., BANK ENGINEERS

This building awarded first prize by Broad Street Association as best building erected on Broad Street, Newark, during 1923

INTERIOR ENTRANCE DOORS

NORTH WARD NATIONAL BANK, NEWARK, N. J.

GUILBERT & BETELLE, ARCHITECTS

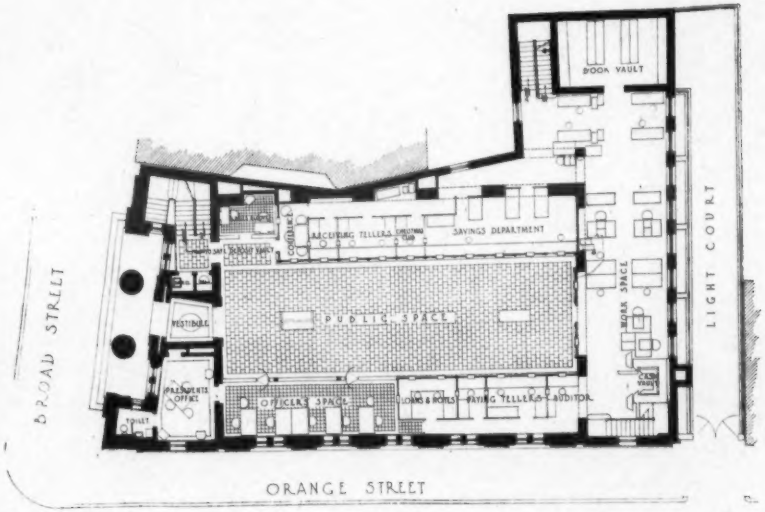
THOMAS BRUCE BOYD, INC., BANK ENGINEERS

NORTH WARD NATIONAL BANK, NEWARK, N. J.

GUILBERT & BETELLE, ARCHITECTS

THOMAS BRUCE BOYD, INC., BANK ENGINEERS

Walls are of marble in lower part, artificial Travertine in upper part. Ceiling is decorated in polychrome



NORTH WARD NATIONAL BANK, NEWARK, N. J.

GUILBERT & BETELLE, ARCHITECTS

THOMAS BRUCE BOYD, INC., BANK ENGINEERS

LOWER STORIES OF STORE AND HOUSE FOR E. WEYHE, NEW YORK

HENRY S. CHURCHILL, ARCHITECT

EDITORIAL COMMENT

WHEN THE PUBLIC shows a lively interest in anything it indicates a healthy condition. No art is vital or important that does not command such an interest. If this be true, then architecture is not a vital thing. It creates no widespread interest. Architectural atrocities are committed every day and a complaisant public remains disinterested.

The public is interested in *construction* that develops usable buildings capable of economical operation and maintenance, yielding adequate revenue, comfortable and sanitary. These qualities can all be incorporated in a building by good engineering and construction methods. They serve such economic needs of a community as can be satisfied by buildings.

There are other needs, however, that are just as important but which are but little appreciated. Good architectural designing is rare in this country for the reason that it is not demanded by owners, and not provided by architects as a matter of duty to the owner, the public and themselves. This condition will prevail until the public demands such designing.

A publisher can print a mediocre book. It is criticised in the daily press and in publications devoted to that purpose. If a book is worth reading once, it is worth reading two or more times. Good music can never be heard too many times; a good painting or statue never becomes tiresome. The worthless book can be sold to the junk dealer. We usually can avoid bad music. Poor pictures can be turned to the wall and bad statuary sent to the dump. A building is a thing seen, is always with us, unless we are blind. It cannot always be evaded and it disappears only through the action of fire, earthquakes and cyclones, or it is removed to make way for a larger and more profitable structure. The tragedy of bad architecture is our inability to avoid it.

A higher standard of architectural designing will come only with a strong and insistent demand on the part of owners, the public and architects. As architects alone cannot cause the desired demand, it is then our problem to create one. This can only be done by means of consistent and intelligent, constructive criticism such as is applied to the drama, literature, music, painting, sculpture, sports and prize fighting. In all of these the public is interested, but architectural design attracts no general attention.

The need of such criticism is clearly stated in The Crow's Nest, *McNaught's Monthly*, March, 1924, reading:

> Ruskin was a great art critic, not because he was never mistaken but because he was never tiresome. Would there were one in the world today like him to start a more or less rabid argument over some phase of American architecture and allow us all to clarify our standards and take new heed to the progress of old crafts while the fires of controversy lit up the literary sky.
>
> It has always seemed to me that chief among the things that we take for granted are our wonderful buildings. We make considerable clangor about labor costs and sanitary plumbing which we "view with alarm." But when the building is up we are content simply to "point with pride." As to what the architecture is all about we are as innocent as a baby. Yes, as two babies—or even twins.
>
> The author of The Seven Lamps of Architecture once said that the secret and consuming spirit of every nation was best expressed in architecture. And he seemed to prove his case. The Greek, beauty; the Roman, magnificence and strength; Gothic, various things, but chiefly, reverence.
>
> It is worth pause to consider what is our chief native creation in architecture. The skyscraper is one. Tall and full of windows. Does this mean that the spirit which prompted it is one that aspires to achievement, to dominance, to overtop everything? And do the windows symbolize vigilance, suspicion, a distrust of neighbor, a desire for more light? Or are these things merely a reflex of the current building laws and another offering of first fruits upon the broad altar of progress?

The tragedy of bad architecture is not confined entirely to a lack of good aesthetic design, important as that visual element is. It extends much farther and comprehends the usefulness of the structure which involves correct planning, safe and durable construction and adequate mechanical equipment. It is all of these elements, in correct balance, that make a structure successful from every viewpoint. This includes, as stated editorially and in Mr. Hewitt's article in THE AMERICAN ARCHITECT of March 12, 1924, that essential ability of a building to be a sound financial investment and acceptable to "those who control the money invested in building operations."

* * *

THE "OR EQUAL" CLAUSE in specifications has always been opposed by THE AMERICAN ARCHITECT which favors the definite specification. Reasons for and against this have been advanced. The retention of the clause seems to be more of a matter of habit than for any other reason unless it is an unconscious recognition of the old tradition that "or equal" induces desirable competition. This tradition may have been based on good reasons but it is open to the suspicion that the writer of the specification perhaps was not quite sure of his selection.

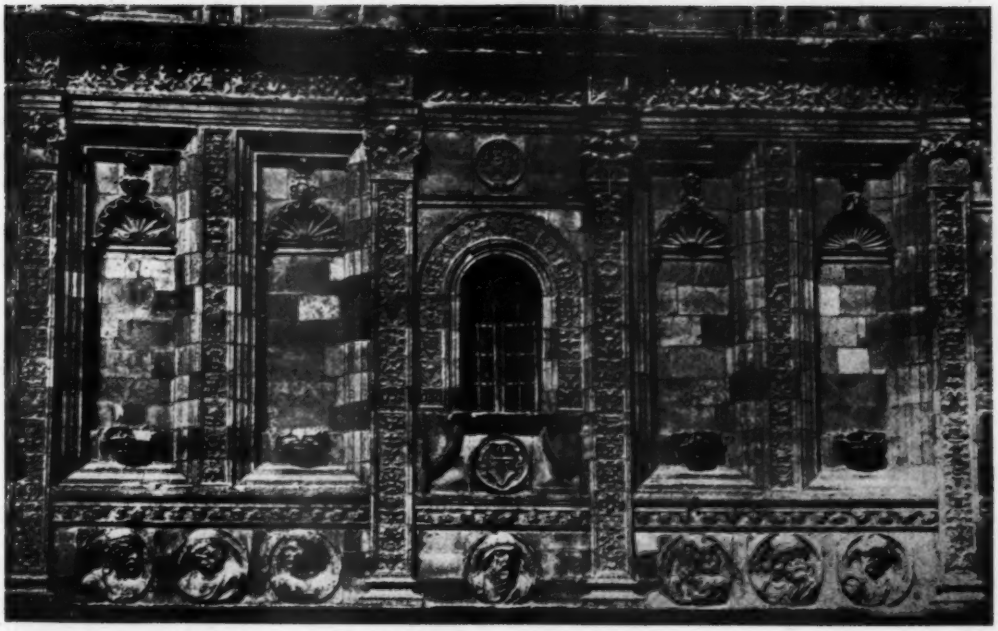
Reputable manufacturers and producers of materials cannot successfully take advantage of a definite specification to increase the price because architects have a knowledge of the true value of the things that enter into building construction. Such a course would immediately disclose itself to the damage of their business. The architect who writes the definite or "no equal" specification has ample means of protecting his client and himself from any attempted extortion.

A subscriber quotes from a specification reading as follows: " . . . material similar to . . . will be acceptable, but other makes will be considered if properly presented for construction and approval."

In this particular case the construction and the materials employed in the article specified are of a distinctive type so that any deviation from the specification would admit something different and not equal in cost, durability or effectiveness. Would it be honest to force this manufacturer to compete with articles obviously less costly to construct and less satisfactory in use? There are many things in building construction that have no equals and substitution becomes a compromise. On the other hand, there are many standardized and graded products that have no individual characteristics to distinguish them. In this case no harm is done by such substitution.

THE AMERICAN ARCHITECT believes that the definite specification should be written as an expression of the architect's judgment. A clause covering this matter, included in the general conditions, has been used and it provides that proposals will not be considered unless based on the contract as written; that alternates can be submitted with statement of the sum to be added to or deducted from the basic bid and accompanied by a specification; any deviation from the original specification thus proposed must be determined and incorporated in the contract. Such a procedure will compel truly comparable proposals, fair to all bidders, and will prevent the interminable bickering and bargaining that often characterize a building operation. It will also eliminate the ambiguous, indefinite, fraud-inviting "or equal" expression which is as trite as the "workmanlike manner" phrase, which if said once in the general conditions is sufficient.

FROM THE ORIGINAL SKETCH BY SAMUEL CHAMBERLAIN



DETAIL FROM THE FACADE OF THE MONASTERY OF SAN MARCOS, LEÓN

(By permission of The Hispanic Society of America)

RENAISSANCE IN SPAIN

BY RALPH ADAMS CRAM, F.A.I.A., Lit.D., LL.D.

"*MEA culpa, mea culpa, mea maxima culpa!*" I have said unkind things of Renaissance architecture, lumping it all together in one general condemnation. I said this in my haste for then I had never been in Spain, now, to use the Mediaeval Scholastic phrase "distinguo." There is lovely Renaissance in Italy down even to Bramante (witness Sant' Andrea, Mantua) and in France of the time of Francis I; there is little enough in England until the brothers Adam, and none at all, so far as I know, in Germany; in Spain there is a century almost of what ought really to be classed as Renaissance though it has its own name of "Plateresque," and it is a style of exceeding beauty. This is why (see *supra*) I strike my breast three times and confess my fault.

It was, I profess, a revelation. From the Hospital of Santa Cruz in Toledo on to the end of the Churrigueresque episode (skipping the competent infelicities of Herrera under Philip II) it is all a period of wonder and delight, and I can say quite honestly that I know few architectural manifestations that give greater or more varied pleasure or are worthy of higher admiration.

Searching for the reasons for this enforced *volte face,* I seem to find the first in the fact that none of the great architects of the time tried consciously either to create a new style or restore an old in its integrity. They found a new beauty and calmly assimilated it, blending it with the Gothic of their nature that was still vital. They were too good artists to be purists; they felt a more flaming impulse than logic and consistency; they did not know enough to do bad work. In all which respects they differed from King Philip and his Herrera who did the frozen Escorial, and the Emperor Charles and his Machuca who did the abortive and arid Royal Palace in Granada. In all this good Spanish Classic there is hardly a motive that is classically correct; not a proportion, a detail, hardly even a moulding; which is why it is instinct with life in every part and possibly why it is so very lovely. The pedantic spirit does not consort with beauty.

It all began with one Enrique de Egas in the golden days of the "Catholic Kings" Ferdinand and Isabella, say the very year Columbus set sail for the discovery of a New World. Some say that Egas' father came from Flanders, but if so, then Spain did to the son what it did to the Venice-trained Cypriote Greek, and made of him the most Spanish of Spaniards. He was a thorough Gothicist, like Gil de Hontañon, in those days when all the rest of Europe had been Renaissance for a

CHAPEL OF THE CARTUJA, GRANADA

hundred years. There is a story that one Pedro Diez, a goldsmith who had served his apprenticeship in Italy, first taught him Classical ideas, but if so he did not teach him enough to hurt him for Egas was always his Spanish self and it was the genius of Catholic and Mediaeval Spain he had to express. His great work was the Hospital of Santa Cruz in Toledo and the others of the same dedication in Granada and Santiago de Compostella. With him began the Plateresque style, the true Spanish Renaissance, and it continued for sixty years, when it officially gave place to "pure Classic" which in its turn died shortly of congenital senility, and was succeeded by the gorgeous and passionate Baroque (still wholly Spanish) of the XVIIth century.

Egas was followed by his son-in-law Covarrubias with the great sculptor Berruguete working with him hand in hand. You may find his work all around Toledo and in Alcalá de Henares, particularly in the Archbishop's Palace there with its exquisite and ingenious detail. Then great names come (a miraculous half-century altogether), Rodrigo Gil de Hontañon of Gothic fame, who did the exquisite University of Alcalá; Francisco de Colonia, Diego de Siloe, whose "Golden Stairs" in Burgos Cathedral would be honor enough for one man; Juan de Alava, Juan de Badajoz, Pedro Ybarra, Diego de Riaño, creator of the old part of the Ayuntamiento in Seville, Antonio Carbonell; and to these must be added the forgotten names of such great masters as those who filled Salamanca with its marvellous colleges, palaces and cloisters. Then there were great sculptors besides Berruguete; Vigarni, Fancelli (the tomb of Prince Juan in Avila) Vasco de la Zarzar, Bartolomé, Ordóñez, Felipe Vigarni, as well as many Italians who became as completely Spanish as the native artists. There were masters of ironwork like Juan Frances, Cristobal Andino, and Sancho Munez the greatest of all; woodworkers like Xamete, silversmiths such as de Arfe who deserves to rank with the greatest of his

PALACE OF SAN TELMO, SEVILLE

craft in any land. These are only a few names and of the more famous men who immortalized themselves in cathedrals and universities and palaces; of the less eminent little record remains, but the whole Peninsula is full of wonderful things lost in far-away towns, that are worthy to stand with the best.

And all of it, great and small, full of beauty, personality, fire. The fat futilities that then were in vogue in other parts of Europe cannot come into the same class, or near it. Here was a continuation of all the delicacy and passion of early Italian and French Renaissance only with a fancy and a vivid *élan* they did not know. It was a great period of peace and wealth and the spiritual exaltation of final triumph over the last of the Moors, but I fancy the chief reason for the peculiar quality of Spanish Renaissance was the fact that the architects were still alive with the Me-

THE CATHEDRAL, GRANADA

THE REJA, REPRESENTING SCENES IN THE PASSION OF CHRIST

(From "Picturesque Spain" by permission of Brentano's)

Rejas, or wrought iron grilles, of rare beauty and the utmost in craftsmanship, are to be found in every cathedral and most churches in Spain. Sancho Munez of Cuenca and Fray Francisco of Salamanca are perhaps the best known for their profound knowledge of the Italian style as shown in these rejas

diaeval spirit which lingered here in full vitality a century and more after it had been crushed in the rest of Europe, and that they were too far away from Italy to feel the force of the academic movement and so gauged all they did by the test of beauty rather than by that of scholasticism. Also of course Spain knew nothing whatever of the neo-paganism of Italy or the blight of the Reformation. She was to know ill times enough after Philip II, but the miseries she incurred can hardly be attributed either to Protestantism or to paganism.

In the beginning, indeed down to the time of Philip II, architects worked indifferently in Gothic, Renaissance or even that Mudejar style which had been created by Moorish craftsmen working, after the Expulsion, for their Christian conquerors, indeed some of their best results were achieved when all these were blended together. I know of no other place except Sicily where so many styles are combined with such resulting unity and *verve*. Certainly academic exactitude is the death of art, and "purity of style" leads only to the "period room."

Certainly this Plateresque art has its limitations. It is primarily an art of decoration for it added no great monumental conception, either clerical or secular, to what already had been achieved under Mediaevalism. Churches were thoroughly Gothic in their setting out, and the same is pretty much true of the universities. The most consistent works are some of the great palaces and these frequently have noble façades of great originality and coherency. As an art of ornament the style is beyond criticism, not only in the spontaneous, living, exquisitely beautiful forms themselves, but in their placing and composition. This is true not only of the stone carving, so crisp and subtle in its lines, forms, shadows, modeling, but of the artesonado and Mudejar ceilings in all their infinite variety, and of the adapted yeseria or carved plaster after the Moorish fashion, the metal rejas as perfect in craftsmanship as in conception, and indeed of all the elements that enter into the architectural whole.

THE GOLDEN STAIRS IN NORTH TRANSEPT OF BURGOS CATHEDRAL

(By permission of The Hispanic Society of America)

Salamanca, the now inaccessible city with a climate reputed to be one of the worst in the world, was, during the reign of the "Catholic Kings," one of the greatest university towns in Europe, with seven thousand students gathered from every part of the continent. It is here that much of the finest Renaissance is to be found—and some sumptuous and contemporary late Gothic as well—but almost no city is without its monuments, though the French in their repeated invasions destroyed much and the XIXth century more by reason of its passion for "improvements"

SANTIAGO DE COMPOSTELLA

(From "Architecture in Spain and Portugal" by Constantin Uhde)

The original church on this site was destroyed by the Moors in 997, and about 1080 the Cathedral shown above was begun. The facade, which dates from 1738, is very elaborately decorated.

"In all this good Spanish Classic there is hardly a motive that is classically correct; not a proportion, a detail, hardly even a moulding; which is why it is instinct with life in every part—"

and vicious restoration. I have spoken of some of these, but Alcalá de Henares is not to be missed because of its University and Archepiscopal Palace, nor Zaragoza with its Lonja and palaces, nor Seville because of its Ayuntamiento, but in León is to be found what Byne calls almost the finest example of all, the Monastery of San Marcos by Juan de Badajoz.

As for Granada Cathedral it is, I confess, somewhat staggering. It is a good deal of a mess and fantastic, even absurd in certain respects, while it is quite without the *finesse* of the true Plateresque style. Its history is suggestive of that of several contemporary structures of a similar function. Begun by Egas on the Gothic lines of Toledo, it had hardly advanced beyond the foundations when he was dismissed and Diego de Siloe was called in, who promptly started off in the new Renaissance style but using the Gothic foundations. Egas had been discharged because he did not work fast enough, and now de Siloe took three years to prepare his models. At this juncture the Emperor ordered the work stopped and a return made to the Gothic mode, but the faithful Classicist posted off to Court and actually succeeded in winning Imperial consent to the carrying out of his plan. He was evidently a great genius in point of engineering for he met and overcame the greatest difficulties in building a Classical church on Gothic foundations, but he was less happy in an artistic sense. He was apparently, for once, trying to do something "really Roman" but can hardly be said to have succeeded to admiration. Preserving not only the Mediaeval plan but the vertical heights and general scheme as well, he distorted his proportions in the most *naïve* manner, added broken entablatures to his humorously composed piers, and altogether succeeded in producing something that has a relationship rather to stage scenery than to real architecture. For just how much, beyond the Capilla Réal with its dome, is actually attributable to Diego is uncertain: the work lagged tediously and the imitation Gothic vaults of the nave were not constructed until the early XVIIIth century, two hundred years after the work was begun, but in any case it can hardly be said that the effort was probably destined to be crowned with success. The other two cathedrals which are said to be more or less of the same type and period, Malaga and Jaen, I have not seen, but Cadiz in a measure derives from this XVIth century group though it was built during the XVIIIth and early XIXth centuries and, as might therefore have been expected, is the wildest and weirdest fabric imaginable.

GRANADA
IN THE ALBAICIN
(From "Picturesque Spain" by permission of Brentano's)

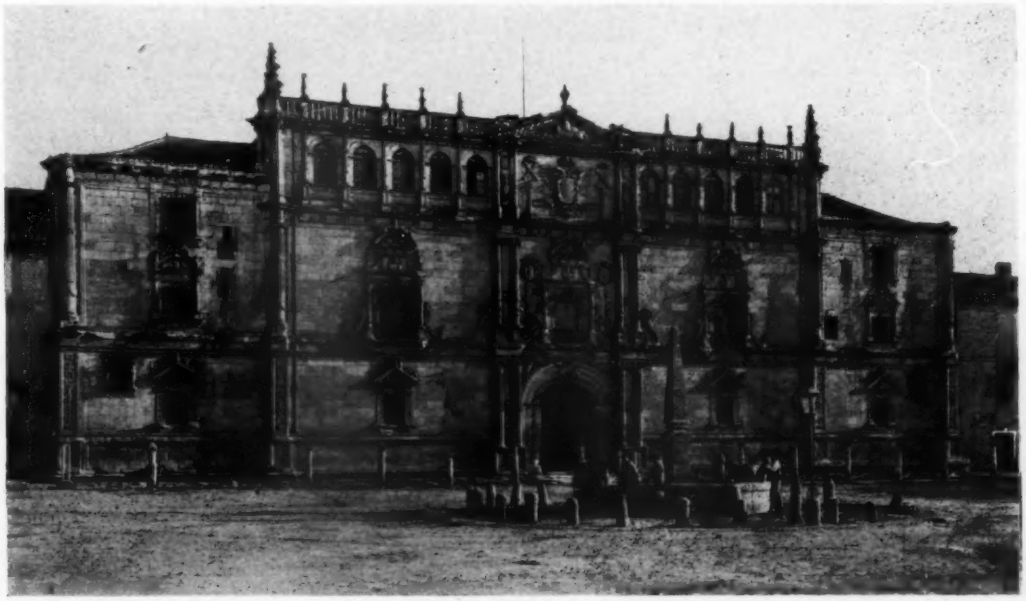
I have nothing in particular to say about the "pure Classic" episode because I am telling about Spanish Renaissance and there is nothing Spanish about the work Herrera did at the mandate of that frozen portent Philip II. Unfortunately, as Prince and King, he lay cold on his land and people for nearly fifty years and as one of his great passions (if you can use the word of such a passionless creature) was architecture, he was able practically to kill off that Plateresque style which had become the mobile and perfect expression of a better Spain than Philip left at his death But for him it might have gone on to even greater heights than already achieved, for it was in the full flush of its vigor when Herrera brought it to an end. He was in charge of all the architecture of the Kingdom; he had an audience of the King twice a week, and his word was law. The Escorial is his completed monument, the cathedral of Valladolid his monumental fragment, both being cold, capable, pedantic and futile. They might be found anywhere that the icy classical spirit held sway, with absolutism and vast wealth to back it up.

The imported and heartless style was so out of key with the Spanish character that it gained no

hold and early in the XVIIth century there was an attempted reversion to Plateresque. Times had changed, however, and much had gone out, or been crushed out, of the Spanish temper, and the result was something quite different, both to the original Spanish Renaissance and to that imposed by Philip and Herrera. The great genius of this period was José Churriguera who possessed all the imagination and wild poetry of the Plateresque masters with little of their good taste and none of their saving austerity—perhaps the two qualities are identical. The work has a close relationship to the Barocco in that both were a natural revolt against the inhuman formalism and pedantry of Palladian Classic. There is something almost anarchical (and very wholesome) in this scornful rebellion against an arid precedent, in this natural joy in piled-up beauty and reckless, extravagant ornament. Such an interior as that of the Cartuja in Granada is a very natural, if somewhat untempered, retort to Herrera's Escorial.

THE CATHEDRAL, ZACATECAS, MEXICO

This style of Churriguera lasted more or less through the XVIIIth century and fixed the type of building for the whole period that architecture retained any element of life. It calmed down after a while and a certain amount of structural form began to appear. The façade of the cathedral at Murcia is a good example of this slightly more conservative style which marks also such buildings as the San Telmo Palace and the Tobacco Factory in Seville. This is the form of Renaissance that was transferred to Mexico and there took on a new lease of life, partly through the wild Indian blood that, inheriting some far-away strain of Maya civilization, contributed a certain *naïveté* that is by no means without charm. One crime this later Spanish Renaissance has to its name, and that is the demolition of number-



THE UNIVERSITY, ALCALA DE HENARES

(From "Architecture in Spain and Portugal" by Constantin Uhde)

THE CATHEDRAL, SEVILLE

(From "Architecture in Spain and Portugal" by Constantin Uhde)

CARTUJA, JEREZ DE LA FRONTERA

(From "Picturesque Spain" by permission of Brentano's)

less great Gothic retables of the quality of those of Seville and Toledo and the Monastery of Miraflores in order that Churrigueresque wonders might take their place. Marvellous they are, almost incredible, with their billowing pediments, writhing, encrusted columns and far-flung scrolls and turbulent, apocalyptic foliage. Sheeted with Inca gold, they climb and swirl up to the crests of the high vaults with a sort of glorified insolence that is half convincing. It is the fecundity and opulence of Rubens translated into the Spanish, not of Castile but of Andalucia.

THE foregoing is the third article in Professor Cram's series on Spain. The first was presented in issue of 16th January, the second in issue of 27th February. The fourth and concluding article will treat of Domestic Architecture in Spain and appear during April.

Just at this time when there is a revival of interest in Spanish motives, an article by an observer so highly trained in analysis will have large suggestive value.

The demand for issues containing these articles has been so great that they are now out of print. Orders for additional copies of the concluding article should be forwarded at once.

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JUDGMENT OF JANUARY 8, 1924

CLASS "A" and "B" ARCHAEOLOGY—MEASURED DRAWING

SUBJECT:—The Bassett House, New Haven, Conn.
AWARD:—SECOND MEDAL:—P. E. Isbell, Yale Univ., New Haven.

CLASS "A" AND "B" ARCHAEOLOGY—II PROJET "THE INTERIOR OF AN EARLY CHRISTIAN CHURCH"

The early Christian churches had simple exteriors, but the interiors were carried to a high degree of elaboration by the use of marbles and mosaics. The clerestory walls of the nave were supported by marble columns, and the ceiling above was either of flat panelling or of open timber trusses, treated in color. The altar was usually placed in a huge niche forming the end of the nave, and it was here that the decorations were the most elaborate.

This problem calls for the treatment of the altar end of an early Christian church. The nave is 35'-0" wide and the aisles at either side about one-half that width.

The attention of the student is called to the Churches of St. John Lateran, St. Paul beyond the Walls, and Ste. Marie Maggiore in Rome; to Ste. Apollinare in Ravenna; and to the Capello Palatino and Monreale in Palermo. He should particularly note the use of marble panels, the mosaic figure designs and the carved inlaid marble altars and pulpits.

Special Notice to Students

BY special arrangement with the Society of Beaux-Arts Architects, there appears in each issue of THE AMERICAN ARCHITECT *an average of five pages devoted to the presentation of drawings selected from the Beaux-Arts Institute of Design exhibitions, and also the listing of awards and the promulgation of all notices to students. These matters will be exclusively presented to students of the Beaux-Arts Institute of Design through the pages of* THE AMERICAN ARCHITECT. *By arrangement with the publishers of* THE AMERICAN ARCHITECT, *a special student subscription rate of* $5.00 *per annum has been secured. Further particulars with reference to this service to Beaux-Arts students may be obtained by addressing* THE AMERICAN ARCHITECT, *243 West 39th Street, New York City.*

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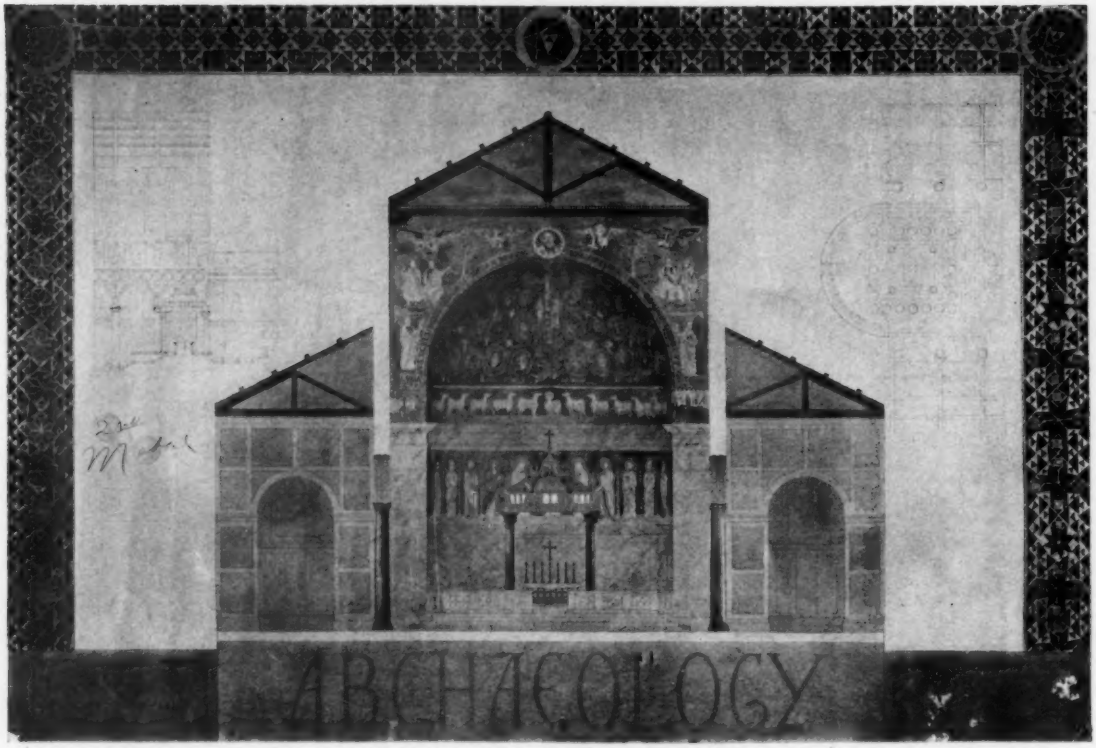

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CLASS "A" AND "B" ARCHAEOLOGY–II PROJET—THE INTERIOR OF AN EARLY CHRISTIAN CHURCH
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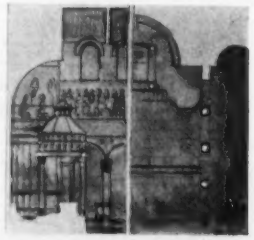

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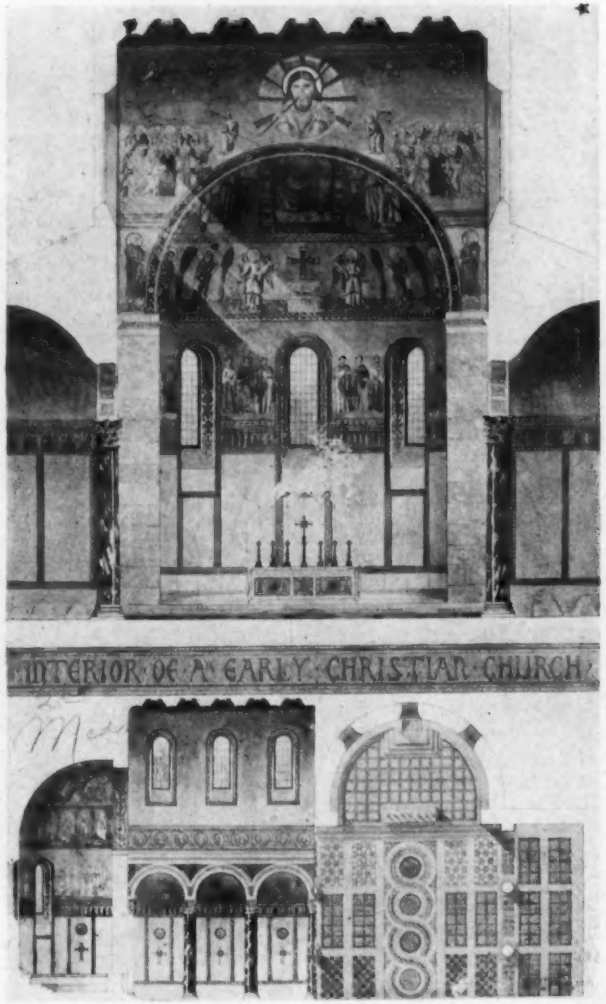
CLASS "A" AND "B" ARCHAEOLOGY–II PROJET—THE INTERIOR OF AN EARLY CHRISTIAN CHURCH

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN



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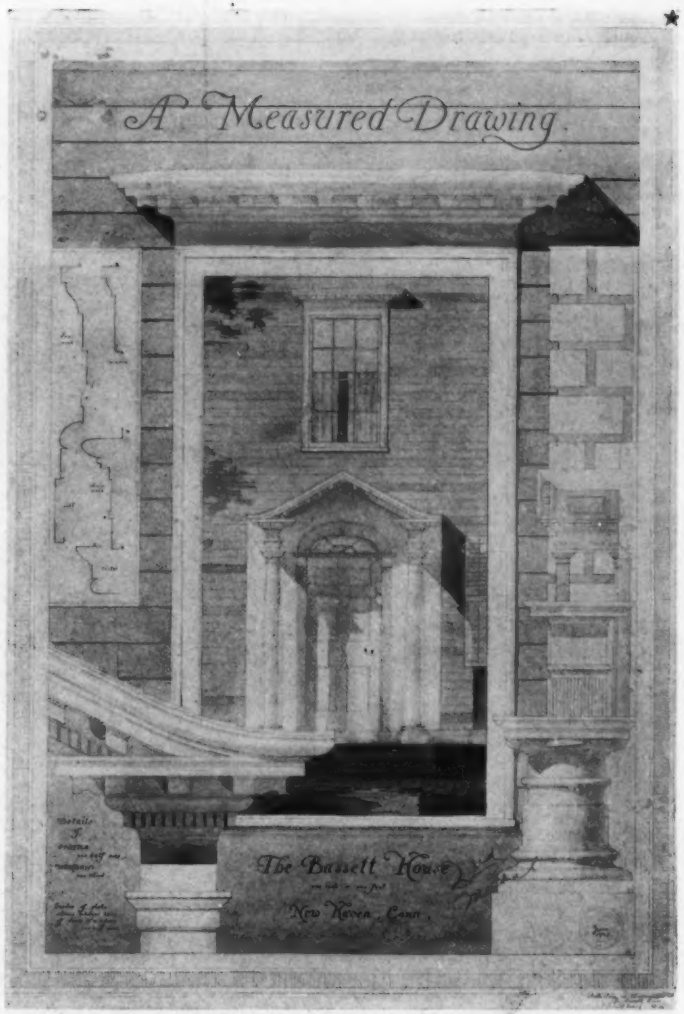
CLASS "A" AND "B" ARCHAEOLOGY–II PROJET—THE INTERIOR OF AN EARLY CHRISTIAN CHURCH



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CLASS "A" AND "B" ARCHAEOLOGY—MEASURED DRAWING

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN
DRAWING

ARCHITECTURAL ENGINEERING

BUILDING CODE LIMITATIONS *on* FLOOR AREAS *in* BUILDINGS

A Discussion *of* Present Practices *and* Presentation *of a* New *and* Logical Method *of* Limiting Areas *of* Floors *in* Buildings

BY R. G. KIMBELL*

THE inhibitions of tradition and precedent, the lack of critical analysis and logical conclusions and the avoidance of responsibility, are the causes of our unsatisfactory building codes. If buildings erected under existing codes stand up reasonably well it is easier and entirely safe to retain those prescribed conditions and thus avoid assumption of responsibility of making any drastic changes even though the public would benefit thereby. These conditions are due largely to the fact that code commissions are generally composed of unpaid persons who can ill afford to make the necessary intensive study. The result is a rehash of existing codes with some modifications to comply with local demands or suggestions of interests who carefully conceal their real motives. Small, well paid commissions composed of competent persons should have charge of these code making undertakings. Municipalities generally consider such work to be of a kind that is not entitled to remuneration and unfortunately, in some cases, interested persons are glad to serve.

Mr. Kimbell's article in which he discusses the usual flat limitations of floor areas in buildings calls forcibly to attention the fact that the proponents of these limitations evidently overlooked several important factors. Area is composed of two dimensions and these involve shape. The shape of an area has a direct relation to the effectiveness of exterior fire-extinguishing apparatus. Then, in order to profit from the ability of such apparatus, shape is an important function of floor area. Street frontage or accessibility is another factor which is generally recognized.

Whether we agree with Mr. Kimbell's assumption of limitations or not, it is evident that he has proposed a logical and rational method for establishing these desirable and necessary limitations which should be incorporated in codes. Improper area limitations which directly handicap the erection of buildings adequate for some occupancies, often unreasonably increase the cost and in other ways retard the industrial and commercial development of the community.—THE EDITORS.

THE extent of usable, unobstructed floor space in buildings that is possible under the regulations established by a building code is one of its most important elements as far as economical building accommodations and expansions for business are concerned. These restrictions have a direct bearing on the attractiveness of cities as locations for rapidly growing industries. The imposition of too stringent limitations on a well established, progressive industry, making its expansion difficult as well as unduly expensive, will many times discourage a concern from locating where such regulations exist. Likewise, too drastic restrictions may be a primary cause for the removal of an industry from one locality to another.

This important factor of permissible floor areas for buildings is generally given little study by those who draft new building codes or by those responsible for their enactment. Local conditions are rarely considered and copy work frequently is the rule rather than the exception. The prevailing method of regulating floor areas and the one which characterizes the majority of building codes is to establish a blanket limitation, which arbitrarily limits the maximum possible area of any floor between fire walls to a certain prescribed number of square feet. In most cases this is applied regardless of the location or occupancy of the building. A small percentage increase to the maximum area is permitted if the buildings front on two, or three streets; an increase is also permitted when buildings are equipped with approved automatic sprinkler systems. Such methods fail, however, to produce equitable results when applied to all classes of property under all conditions.

This discussion is offered in the hope that it will result in free and unrestrained comment from those who have an interest in and are affected by

*Architectural Engineer, National Lumber Manufacturers Assn.

XUM

such matters. It is presented not with the idea that it is the ultimate in perfection but to offer a basis from which good, logical and reasonable standards may be evolved.

To eliminate confusion in picturing the conditions covered, the main discussion in this article will cover a "non-sprinklered, non-fireproof, masonry walled and lumber joisted Ordinary Construction" building. Several factors affecting the area and comparisons of possibilities under prevailing regulations will be considered. Those limitations in common use which are mentioned, while not universal, are fairly representative and are similar in results and intent though there may be an infinitude of minor variations.

The new theory which is here presented by the writer, in his judgment, produces under some circumstances greater safety, under all circumstances at least equivalent safety, and is more feasible than any of the systems now in vogue.

Consider first the non-fireproof, unsprinklered, Ordinary Construction building, when erected fronting on one street only. Assume that its area is restricted by the customary blanket limitations to 5,000 square feet. Under this clause it is possible to erect a building 25 feet wide and 200 feet deep. The only access to the interior of this building from a fire fighting viewpoint is through the openings in one 25 foot street wall. In case of fire the full 200 foot depth of the building must be reached from this line. Here is the first inconsistency. If this same building were turned so that the 200 foot wall faced the street, it still would be required to comply with the 5,000 square foot limitation and could only be 25 feet deep. Which is the better building? Considering only these two buildings, the most serious difficulties to extinguishing fires are unquestionably presented by the very deep, narrow one. If such a depth is safe for a narrow building,—and existing laws certainly warrant the assumption that it is considered safe,—why should not the wider building be allowed to have practically the same depth? It seems sensible to believe that if the second building might not be increased in depth safely, the first building should certainly be decreased.

The comparisons herein drawn are not intended to imply that a long narrow building should not be permitted but that the area should be allowed to increase in ratio to the increasing accessibility of the interior of the building to fire fighting facilities. For comparative purposes it would seem logical to place more stringent limitations on the size and shape of buildings which appear to present the greater hazard and perhaps to reduce the present possibility of great depth for the narrow building in proportion to its width, or better, to permit an increase in area as the width of the building increases. Certainly some means should be provided whereby the property owner who has a wide lot may erect a building with a greater depth than is now possible for the full street frontage. He should be able to utilize a greater percentage of his lot area than is now possible in one building. True, the owner of such a property could build several very long, narrow buildings in order to use every possible square foot of his ground, but the wider, deep buildings would be not only less costly, but they would also create less serious hazards than several very long narrow buildings.

As soon as a property is split up into a number of buildings, especially if they are very narrow, it becomes undesirable from most industrial and business standpoints and eventually results in the occupying of each unit by separate tenants. It is needless to remark about the comparative hazards from physical conditions of property as they are maintained by a large, well established concern and a number of small individual ones.

In line with the reasoning that too great depth for narrow buildings should be prevented and that the present possible depths and areas for wide buildings should be materially increased, the writer developed a theory or system which takes into consideration the ratio of the accessibility of the interior of a building from the street to the total permissible area of the building. This formula is proposed to serve in the place of the present blanket square foot limitations:

$$\frac{AP}{E} \text{ not to exceed } K$$

In the formula:

A = the area of any floor.

P = the perimeter of the building in feet.

E = the lineal feet of exterior walls which front on a street.

K = a quantity which is established and varied according to the kind of construction and use of the buildings.

Thus, K in the formula is the factor which is graduated and varied in order to apply the proper limitations depending on the kind and type of construction, whether it is equipped with a sprinkler system, and considering also the severity of the occupancy or use of the building. In other words the area of the building multiplied by the perimeter of the building in feet, with the result divided by the lineal feet of street exposure shall not exceed the amount established for K.

The study and problems involved in arriving at this formula will not interest the general reader. The questions to be satisfactorily answered are,

1. Is it usable and flexible in application, and readily varied to apply to different conditions, and,
2. Are the results when it is used reasonable and suitable for the conditions to be met?

That the formula does meet these requirements satisfactorily, the writer will endeavor to show in the discussion. It provides a means of compensating for decreasing or increasing street exposures. It gives credit for greater accessibility in wider buildings by permitting greater depth and areas for them than is now possible with the usual blanket restrictions. The particular values or amounts which should be established for K in the formula for the different kinds of buildings will be discussed later.

In considering the non-fireproof, unsprinklered Ordinary Construction building fronting on one street the question is asked why, if a 200 foot depth is permitted for a 25 foot wide building, should not a building that is 75 feet or 100 feet wide be permitted to practically the same depth? If one merely established a maximum depth for buildings and let it go at that, the width of a building of this depth might continue endlessly. See what actually does result from the use of the formula by substituting for purposes of experiment, 20,000 for K.

The first building it is proposed to erect is one that is 25 feet wide. May this building be built to a depth of 100 feet? The area of this building is 2,500 square feet and it will be permitted if the result from solving the formula is not greater than 20,000. The perimeter of the building, or P, is 250. The lineal feet of street exposure, or E, is 25. Solving the formula as follows:

$$\frac{AP}{E} = K \text{ and } \frac{2{,}500 \times 250}{25} = 25{,}000$$

The solution exceeding by 5,000 the value of 20,000 which was established for K, prohibits the erection of the building to that depth.

Then determine if this building can be built to a depth of 88 feet. Its area or A would be 2,200 square feet; E would be 25; and P, 226; thus giving:

$$\frac{AP}{E} = K \text{ and } \frac{2{,}200 \times 226}{25} = 19{,}888$$

The result being less than the maximum established for K permits the erection of the building to that depth. Compare this area and depth with the possible 200 foot depth and 5,000 square foot area under the blanket provision for a building of the same width.

Next there will be shown how the permissible area of a wider building is increased and the ratio of the street exposure taken into consideration in determining its area. Suppose the next building under consideration is 200 feet wide fronting on a single street. May this building be built on a depth of 50 feet? A would equal 10,000. P equals 500 and E equals 200. Solving the equation as follows:

$$\frac{AP}{E} = K \text{ and } \frac{10{,}000 \times 500}{200} = 25{,}000$$

The result, exceeding by 5,000, the maximum of 20,000, prohibits the erection of the building.

This same building with a 41 foot depth will next be tried—A being 8,200; P, 482; and E, 200. The result would be 19,762, and falling within the 20,000 limit this building would be permitted.

Compare this depth of 41 feet and area of 8,200 square feet with the depth of 25 feet and area of 5,000 square feet for a building of the same frontage under the blanket system of limitations. It was found that in the first instance the possible depth of the narrow building with the formula was 66% less than under the blanket provision, but in this instance it is found that the possible depth

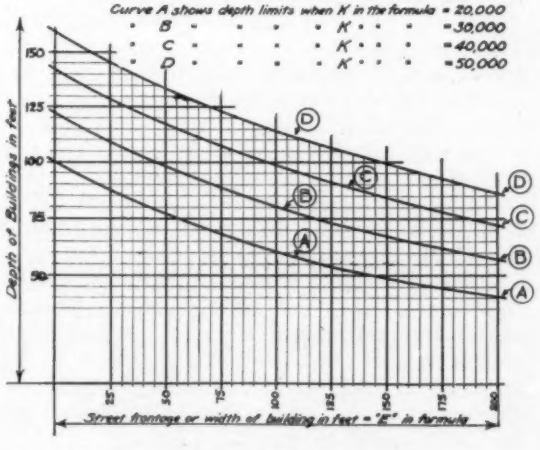
Table I

Maximum depths and areas for various widths of buildings when fronting on one street only, when limited by use of formula with several values for K.

Lineal feet of street frontage (E)	K=20,000		K=30,000		K=40,000		K=50,000	
	Depth	Area	Depth	Area	Depth	Area	Depth	Area
20	90	1810	113	2260	132	2640	148	2970
25	88	2206	110	2762	129	3238	146	3650
30	86	2580	108	3240	127	3810	144	4320
35	84	2940	106	3723	125	4375	141	4952
40	82	3280	104	4160	123	4920	139	5560
50	78	3904	100	4998	118	5934	135	6750
60	74	4955	96	5760	114	6870	131	7860
75	69	5175	90	6787	109	8175	125	9375
100	62	6200	82	8200	100	10000	115	11550
125	55	6937	75	9375	92	11500	107	13375
150	50	7500	68	10275	85	12750	100	15000
175	45	7875	64	10937	78	13737	93	16275
200	41	8300		11600	73	14600	87	17400

Chart I

Curves show depth limits for rectangular buildings of various widths when fronting on one street only with use of formula.


Curve A shows depth limits when K in the formula = 20,000
B K = 30,000
C K = 40,000
D K = 50,000
Depth of Buildings in Feet
150
125
100
75
50
Street frontage or width of building in feet = "E" in formula

and area for the wide building is 64% greater with the formula than with the blanket limitation.

It is quite apparent from the foregoing comparison that the use of the formula reduces by more than 50% the difficulty of extinguishing fire in the various narrow buildings while permitting the utilization of a greater proportion of wider lots without appreciably increasing hazards, and yet at the same time gradually reducing the depth between the front and rear walls.

Now it is true that a formula which would not involve quite so much calculation could be developed which would give the maximum depth for a given width but such a formula could be made to apply only to buildings that were exactly rectangular in form and would not provide for buildings of irregular shapes having courts and so forth —a classification representing a large percentage of those erected.

For buildings fronting on one street the maximum depths for several widths are shown in Table I and are illustrated graphically on Chart I, Curves A, B, C and D on Chart I showing the depth limits for various widths of buildings when the quantities of 20,000; 30,000; 40,000; and 50,000 are substituted for K in the formula.

Table II shows the greater depth for narrow buildings and shallow depths for very wide buildings under the blanket limitations of 5,000; 6,500; 8,000 and 13,000 square feet. Curves W, X, Y and Z on Chart II illustrate the possible great depths for narrow buildings and unreasonable abrupt decreases in depths of wider buildings under these blanket limitations. A comparison of Curves A, B, C and D on Chart I and Curves W, X, Y and Z on Chart II, will illustrate how much more logical and reasonable is the application of the formula than are the blanket provisions for buildings fronting one street.

It is often true that narrow buildings and buildings on narrow lots are not so carefully designed, nor is their construction so closely watched and supervised as are the buildings of greater dimensions. Businesses occupying small buildings are not so well established as those requiring larger structures. Their stock is more congested. The less stable businesses are more quickly affected by hard times. It is well known that the majority of incendiary fires and a large proportion of the fires from personal carelessness take place where such conditions exist. Further the possibility of over-insurance is greater in such buildings, thus adding another hazard. It is a common statement among fire chiefs that many fires are caused by "friction," which is explained as "rubbing a $25,000 insurance policy against a $15,000 building."

The smaller buildings are generally characterized by cheaper equipment and more faulty design and construction than are the more elaborate ones. The occupancy of larger buildings is more likely to be of a character which would maintain the building in a more cleanly condition. There is also the greater probability that a watchman's services are used.

Continue to consider the non-fireproof building, but take one erected under slightly different street frontage conditions. This time the building faces a street at both front and rear, that is, it is to be built on a "through lot." Assume for comparative purposes that the blanket limitation applying to this building is the common one of 6,000 square feet and also continue to use 20,000 for K in the formula. Under the blanket limitation of 6,000 square feet it is found that a 25 foot building can be 240 feet deep and that a 100 foot building can be 60 feet deep.

What would be the maximum area and depth for those same widths buildings by using the formula? Could the 25 foot building be built to a depth of 135 feet?

Chart II

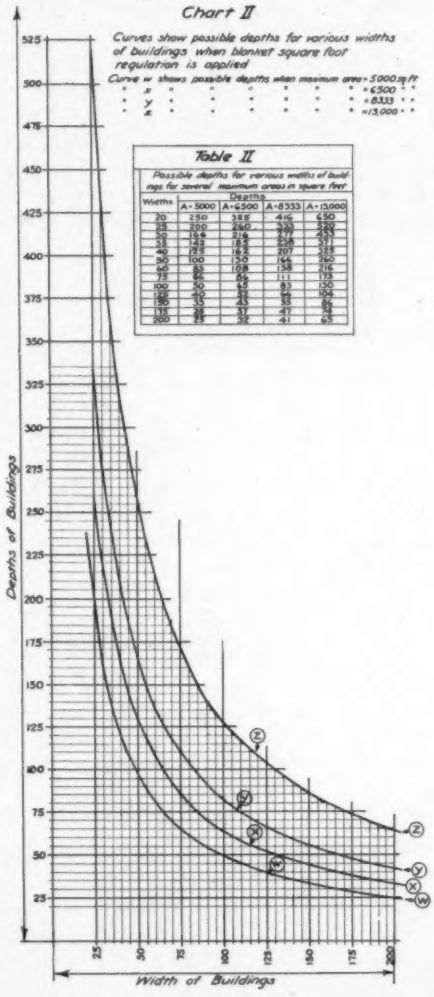
Curves show possible depths for various widths of buildings when blanket square foot regulation is applied

Curve w shows possible depths when maximum area = 5000 sq. ft.
" x " " " " " = 6500 " "
" y " " " " " = 8333 " "
" z " " " " " = 13,000 " "

Table II

Possible depths for various widths of buildings for several maximum areas in square feet

Widths	Depths			
	A = 5000	A = 6500	A = 8333	A = 13000
20	250	325	416	650
25	200	260	333	520
30	165	215	277	433
35	143	185	238	371
40	125	162	207	325
50	100	130	166	260
60	83	108	138	216
75	66	85	111	173
100	50	65	83	130
150	33	43	55	104
150	33	43	55	86
175	28	37	47	74
200	25	32	41	65



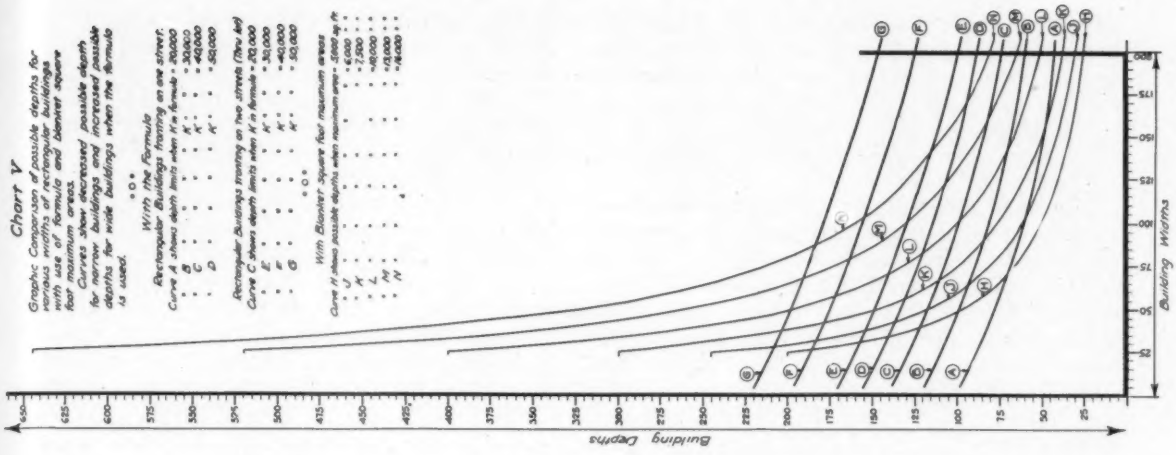


Chart V
Graphic Comparison of possible depths for various widths of rectangular buildings with use of formula and blanket square foot maximum areas.
Curves show decreased possible depth for narrow buildings and increased possible depths for wide buildings when the formula is used.
With the Formula
Rectangular Buildings fronting on one street.
Curve A shows depth limits when K in formula = 20,000
" B " " " " " " K " " = 30,000
" C " " " " " " K " " = 40,000
" D " " " " " " K " " = 50,000
Rectangular Buildings fronting on two streets (thru lot)
Curve C shows depth limits when K in formula = 20,000
" E " " " " " " K " " = 30,000
" F " " " " " " K " " = 40,000
" G " " " " " " K " " = 50,000
With Blanket Square foot maximum areas
Curve H shows possible depths when maximum area = 3600 sq ft
" J " " " " " " " = 6400 " "
" K " " " " " " " = 7,500 " "
" L " " " " " " " = 10,000 " "
" M " " " " " " " = 14,000 " "
Building Depths
Building Widths

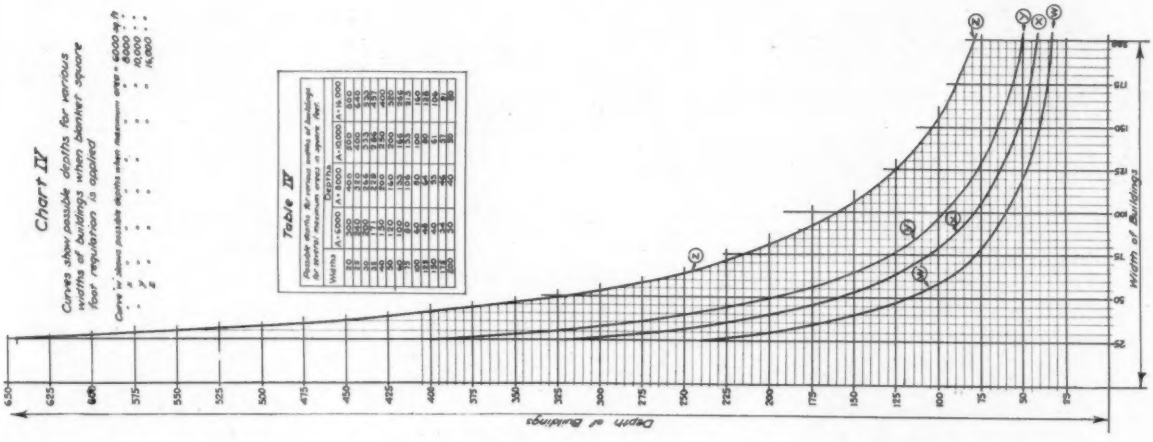


Chart IV
Curves show possible depths for various widths of buildings when blanket square foot regulation is applied
Curve N shows possible depths when maximum area = 6000 sq ft
" P " " " " " " " = 8000 " "
" R " " " " " " " = 10,000 " "
" T " " " " " " " = 14,000 " "
Table IV
Possible depths for various widths of buildings for several maximum areas per floor
Widths
Depths
A = 6000
A = 8000
A = 10,000
A = 14,000
Depth of Buildings
Width of Buildings

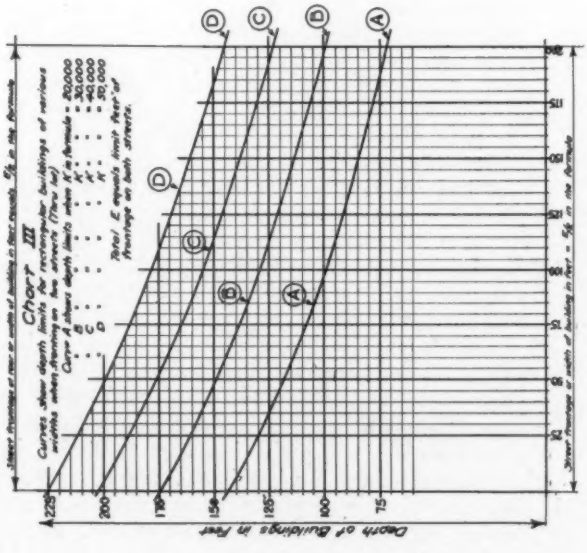


Chart III
Curves show depth limits for rectangular buildings of various widths when fronting on two streets (thru lot)
Curve A shows depth limits when K in formula = 20,000
" B " " " " " " K " " = 30,000
" C " " " " " " K " " = 40,000
" D " " " " " " K " " = 50,000
Point E equals limit Point on Frontage on both streets.
Depth of Buildings in Feet

Table III

Maximum depths and areas for various widths of buildings fronting on two streets (thru lot) when limited by use of formula with several values for K.

Limited by width of street frontage on each street	E	K=20,000		K=30,000		K=40,000		K=50,000	
		Depth	Area	Depth	Area	Depth	Area	Depth	Area
20	40	131	2620	163	3270	190	3800	215	4300
25	50	129	3225	161	4025	188	4700	211	5275
30	60	127	3810	159	4770	186	5580	209	6270
35	70	125	4375	156	5477	183	6405	206	7227
40	80	123	4920	154	6160	181	7240	204	8160
50	100	118	5900	150	7500	176	8800	200	10,000
60	120	115	6900	146	8750	172	10,320	196	11,760
75	150	109	8175	139	10,462	166	12,450	188	14,138
100	200	100	10,000	130	13,000	156	15,600	179	17,900
125	250	91	11,375	121	15,187	147	18,375	170	21,250
150	300	85	12,750	112	16,806	138	20,775	161	24,150
175	350	79	13,825	106	18,500	130	22,827	152	26,600
200	400	73	14,600	100	20,000	124	24,800	144	28,900

Its area would be 3,375 square feet. Its perimeter is 320 feet and as there are 25 feet of street frontage on each street the total E in the formula will be 50. Solving the formula thus:

$$\frac{AP}{E} = K \text{ and } \frac{3{,}375 \times 320}{50} = 21{,}600$$

The result exceeding by 1,600 the maximum of 20,000 the value established for K, prevents the erection of the building to that depth.

This building could, however, be built to a depth of 129 feet. The maximum depth in this building from lines of hose streams access is 64½ feet. Compare this with the depth of 240 feet and a 124-foot maximum distance from hose line access, which is possible under the blanket limitations for a building of the same width.

The second building is to be 100 feet wide. Can it be built to a depth of 100 feet with a consequent area of 10,000 square feet? Solving the formula it is found to be possible. The greatest distance from a street wall in this building is 50 feet, which appears most reasonable. With a blanket provision, however, the building's whole depth is 60 feet and the maximum distance from a street wall is 30 feet. Compare the decrease in depth for the narrow building and increase in depth for the wide building with the depths and the area of 6,000 square feet for the same frontage under the blanket clause.

Table III shows several maximum depths for the various widths of buildings when K in the formula equals 20,000; 30,000; 40,000, and 50,000 and Curves A, B, C and D on Chart III illustrate graphically the depth limits for various widths of buildings for those values of K when the formula is applied to buildings fronting on two streets built under "through lot" conditions.

Curves W, C, Y and Z in Chart IV and Table IV show the possible great depths for narrow buildings and shallow depths for very wide buildings under the blanket provisions of 6,000; 8,000; 10,000 and 16,000 square feet.

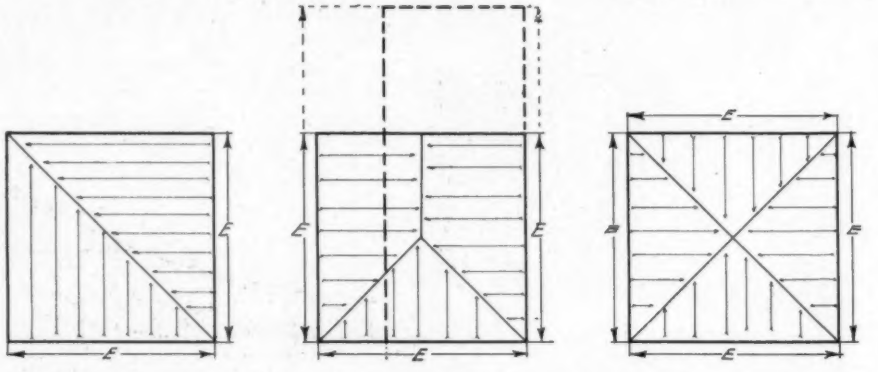
It has been noted that in the general run of building codes an increase in area is permitted when a building fronts on two streets and another increase when it runs on three streets. What does this mean if not an admission that credit should be given for increasing street exposure or accessibility?

It is readily apparent that the maximum depth from a street exposure wall in a building on a corner lot will be developed in a square building. In a square building on a corner lot P/E equals .5. This multiplied by the quantity 20,000 which has been established for K permits an area of 10,000 square feet. A building of that area, if square, would have dimensions of 100 feet each way. It will be observed from Chart VI that only 25% of the area of that building will be in excess of one-half of the depth of the building from a street wall and further that another 25% of the area will be subjected to cross fire from hose streams within that distance.

Chart VI
Use of formula
Buildings fronting two streets (corner lot).
Accessibility of interior and maximum depth from exposure wall.

Chart VII
Use of formula
Buildings fronting on three streets.
Accessibility of interior and maximum depths from exposure walls

Chart VIII
Use of formula
Buildings fronting on four streets.
Accessibility of interior and maximum depths from exposure walls



In a square building facing on three streets P/E will equal .75, which multiplied by 20,000 equals, 15,000 square feet. Such a building's dimensions are 123 feet. Chart VII illustrates that 50% of the building is subject to cross fire from hose streams within a range of one-half the width of the building and that the other 50% of the area is less than one-half the width of the building from a street wall.

It is, of course, possible to develop a building on such a lot where P/E would equal more than .75 and the area would have a corresponding increase but as soon as P/E is more than .75 the building is oblong instead of square and the depth from the street wall steadily decreases. This will be apparent from a study of the dotted lines appearing on Chart VII.

The same observations regarding three street frontage apply in general to four street frontage except that all the area of the building fronting

four streets is subject to cross fire by hose streams within one-half its dimensions as illustrated by Chart VIII.

The use of such a graph which combines the curves on Charts I and III would enable the designer to determine readily what depths and areas he might use in laying out a building when the formula was applied and several amounts for *K* established, for various uses and kinds of construction permitted for those uses.

When the horizontal cross section of the space between fire walls and exterior walls is not exactly rectangular or is irregular in shape the lineal feet of exterior wall which fronts and runs parallel to the street shall only be considered in determining the quantity of *E* in the formula. Side walls fronting on a court only should not be considered as street frontage, unless the court has a width equal to the width which is considered as a street, as defined in the building code.

Many occupancies should have more severe limitations placed on them than are necessary for other uses. Buildings for public garages and acid works, or those which contain highly inflammable liquids or explosives should be confined to less space between division walls. With such a formula in use it would be very simple to substitute different values for *K* to suit the hazards of the occupancy of the buildings. As established custom now dictates, a maximum area is applied and then such safety as is provided comes from limiting the kinds of construction which may be used for various purposes. Decreasing possible areas in ratio to the hazards would seem to warrant permitting cheaper kinds of construction for uses where now they are prohibited and also decreasing hazards justify increasing the present possible areas.

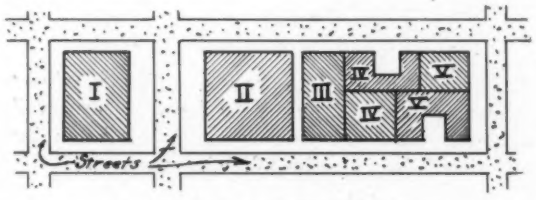
The foregoing are cited as illustrations and examples of how a building official could check plans submitted to him if the formula were used in the code. It would take very little more time on the part of designers to determine what areas they might use and they certainly would need little time to search for the answer if a graphic chart were provided as a supplement for use with building codes.

Thus far in the discussion only buildings of rectangular shape have been considered. It has been found, however, that the application of the formula to buildings which are not rectangular or which are irregular in shape will work out along much the same lines. As noted, the exterior walls which front and run practically parallel to the street should only be considered for *E* for irregular buildings. Detailed examples for irregular shaped buildings are unnecessary if this plan is found to be sound in principle for rectangular buildings.

In considering the problem of area limitations, the factor of high values in certain districts should govern to a considerable extent the restrictions placed upon buildings.

For the reason that the high value business sections have fire fighting facilities superior to all other localities, it seems fair to assume that one, two or even three story buildings, for many uses in such districts, might cover practically the entire lot. Openings in side walls should be required to have ample protection anyhow to prevent communication of fire to adjoining premises.

Of course, it might be desirable to some interests to have occupancies subdivided into as many small cubicles as possible to reduce to a minimum the quantity content and thus the possible insurance



ILLUSTRATING BUILDING LOCATIONS

Building I Fronting 4 streets
Building II Fronting 3 streets
Building III Fronting 2 streets (Through lot)
Building IV Fronting 1 street
Building V Fronting 2 streets (Corner lot)

loss thereto. Possibly the square foot maximum heretofore established in codes were predicated on the assumption that only so much goods could be placed in that amount of space. If they were based on such an assumption, however, one would think that it would be the cubic capacity and not the area of the building in which they would be interested and that consequently possible areas would increase as the height of the building decreased or *vice versa*. If open spaces are of sufficient importance to a successful conduct of a property owner's business to warrant his paying a higher insurance premium to cover these conditions and if in maintaining his business he does not create a hazard to or jeopardize his neighbors' welfare or property, he certainly should be permitted to exercise his own judgment regarding the extent of his establishment. If it is imperative for the building owner to reduce his insurance risk, let him follow the requirements of the insurance company from which he takes a policy. It is hard to see that requirements to safeguard insurance risks should have any place in a building code. As long as an individual provides adequate safeguards to protect his neighbor from any hazard he may have created and as long as he provides ample safety for the occupants of his property the interests of public safety will be served and his initiative should be unhampered by unreasonable ordinances. It is assumed, of course, that proper protection of wall

openings, enclosure of vertical shafts and adequate means of egress are required by the building code anyhow.

The scheme which has been described is flexible in character. By varying the value allowed for K, reasonable limitations can be applied to different classes of construction and also consideration given the hazards of uses or occupancies.

It is suggested that the requirements outlined immediately hereafter be used as a basis in developing sound regulations for building codes to replace the present systems which have to do with the floor areas of buildings. It is readily apparent how the formula may be manipulated to suit most any condition.

Suggested Code Requirement

Floor Areas Allowable. The maximum allowable area of any floor between fire walls or party walls and exterior walls shall be limited and determined by the following formula:

$$\frac{AP}{E} \text{ shall not exceed } K$$

In the formula:

A = the area of any floor.

P = the perimeter of the building in feet.

E = the lineal feet of exterior walls which front on a street.

K for Fire Resistive Construction buildings and buildings of Heavy Timber Mill Construction used for non-hazardous occupancies and which have all vertical openings and shafts through floors enclosed in fire resistive partitions with all openings thereto provided with automatic self-closing fire doors and which have all openings within ten feet of a division wall and openings exposing an adjoining building, protected by approved fire windows and which are equipped with approved automatic sprinkling devices, shall be unlimited.

K for Fire Resistive Construction buildings used for occupancies of Classes (insert here classes more hazardous) shall be 50,000.

K for Fire Resistive Construction buildings used for occupancies of Classes (insert here the still more hazardous uses) shall be 40,000.

K for Heavy Timber Mill Construction buildings for classes (insert here the classes not seriously hazardous) which are equipped with approved sprinkler installations shall be 50,000.

K for Heavy Timber Mill Construction buildings used for (more hazardous) purposes and for buildings which are unsprinklered shall be 40,000.

K for Heavy Timber Mill Construction buildings when unsprinklered shall be 30,000.

K for Ordinary Construction (masonry walled and lumber joisted) buildings with approved sprinkler installations and which are used for non-hazardous occupancies and which have all vertical openings in fire resistive enclosures and which have all windows facing within .... feet of other than public property protected with fire windows, shall be unlimited.

K for Ordinary Construction (masonry walled and lumber joisted) buildings for classes of occupancies (insert proper classes here) which are equipped with approved sprinkler installation shall be 40,000.

K for Ordinary Construction buildings unsprinklered shall be 30,000.

K for frame buildings placed within 25 feet of side lot lines and which are unsprinklered shall be 20,000 and if said buildings are sprinklered shall be 30,000.

The combined area of frame buildings, sheds and out-houses located on any one lot shall not exceed 80% of the lot area.

When horizontal cross section of the space between fire walls and exterior walls is not rectangular or is irregular in shape the lineal feet of exterior wall which fronts and runs nearly parallel to a street only shall be considered in determining the quantity E in the formula. Side walls fronting on courts only shall not be considered as street frontage for this purpose, unless such courts have a width equivalent to that of a street as defined by this code.

GERMANY TO USE HOLLOW TILE FIRE WALLS

IT is learned that fire walls may now be built of hollow tile under a new German building regulation. Previous regulations had required such walls to be solid, and this was interpreted to prohibit the use of hollow tiles or blocks. Under the revised regulation, hollow units will be permissible if the walls are of adequate strength and the cells do not form more than half the cross-sectional area.

REVIEW *of* RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

REALLY, you know, between ourselves, this reviewing business isn't what it is cracked up to be. It is so extremely, to use a very mild adjective, a very unsatisfying adjective, and really we could find a much better one but these things look so coarse when printed, particularly when their use in print is becoming so common; so, let us repeat, it, meaning the reviewing business above referred to, is extremely uncertain. One's state of mind, the weather, the time of day, the paper we are using, and more than all the number and quality of the magazines one is supposed to review and sometimes to read; all these are uncertain, to say nothing of one's temper. Possibly even the color of the wall-paper and the carpet has something to do with it. Probably many severe and unkind things have been said, not by us, of course, merely because of a poor lunch or a lost competition; and a lot of unmerited praise has been spooned out to the undeserving merely because the day is rosy and the income tax is paid. This is not as it should be. The Editor should insist on a hard and fast contract that all reviews should be written exactly on the same day of the month and at the same time of day, say after a cold tub at six in the morning and under the same surroundings. In this way things would always appear in the same light; and if this scheme should prove feasible it could be applied to the judgment of competitions; a competition drawing looked at in the cold, gray dawn at six would seem quite different from the same drawing after lunch. We do not intend to try this ourselves, but we would extremely like to have I. K. Pond try it and report.

In the present case the only thing that strikes us as particularly uncertain is the quality of the mental pabulum on which we have been browsing, and strangely enough, its uncertainty is because it is all so certain. It is mostly good, excellent in places, but there is nothing that stands out, no headlines, no front page stuff. The English magazines have the same competition news, generally poor, as Mr. Pond has noted in his last review, and not very well presented; in presentation certainly not the equal of ours, but there is one rather human touch about their articles which might be followed here, and that is the invariable publication of a photograph of the winner; they are rather strong on publishing portraits generally in English magazines; and it is not such a bad idea. There are probably many who have followed Berty Goodhue's career with interest for years and who undoubtedly picture him as a tall, ascetic, clerical looking gentleman of serious mien, and there are many even in Chicago who do not know whether Johnny Howells has whiskers or a bald head. After writing this I have a vague idea that something of the sort was suggested by this magazine, and it is our recollection that we wrote some kind of a letter about it, although just the point of view we took in that letter is uncertain; probably we frowned on it, but anyway it strikes us

From "The Architects' Journal," London

SOUTH TRANSEPT OF ST. PAUL'S CATHEDRAL

(From a drawing by Thomas Malton)

From "The Architects' Journal," London

DINING ROOM
THE QUEEN'S DOLLS' HOUSE
SIR EDWIN LUTYENS, R.A., ARCHITECT

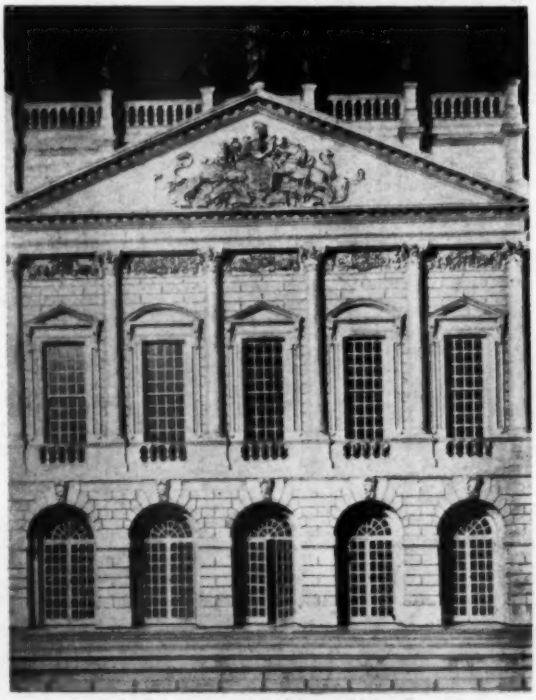
From "The Architects' Journal," London

LIBRARY
THE QUEEN'S DOLLS' HOUSE
SIR EDWIN LUTYENS, R.A., ARCHITECT

now as a good idea and we'll stick to it. And then, too, there is in *The Architects' Journal*, London, a Mr. H. de C. who makes very clever and amusing caricatures of speakers at Institute proceedings. It all adds interest.

Apart from the competitions there is the Queen's Dolls' House, a most elaborate affair, presented for some reason we are unable to fathom, to her majesty Queen Mary. It is at a scale of an inch to a foot and was designed by Sir Edwin Lutyens. The exterior is quite understandable, the scale is ample to show every detail, but the interiors are marvels. As can be seen from the illustrations, apparently everything is complete and of the real materials; the furniture, hangings, carpets are as they would be full size and even the table furnishings are of silver and of the correct scale. The exterior is plainly a model, but the interiors might easily be mistaken for photographs of a real house. Just how her Majesty will play with it remains to be seen. It will be exhibited for charity doubtless, but it seems to us a rather silly waste of much valuable time and much real money.

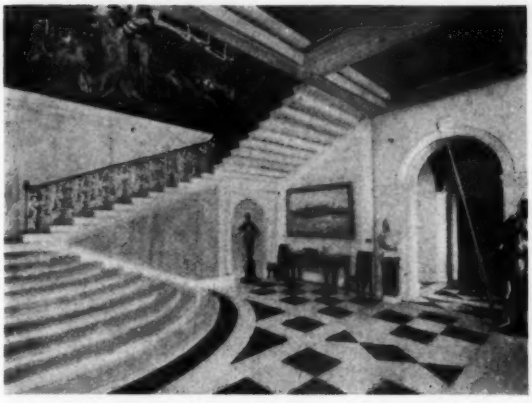
From "The Architects' Journal," London



DETAIL OF PRINCIPAL ELEVATION
THE QUEEN'S DOLLS' HOUSE
SIR EDWIN LUTYENS, R.A., ARCHITECT

In *The Architectural Review*, London, Walter Bayes continues his defense of his teaching of art at Westminster and his defiance to Mr. Emanuel's strictures and makes rather heavy weather of it. He writes rather badly, does Mr. Bayes; that is to say, it is often hard to make out just what he means, except that he is much in earnest and very much peeved. To a certain extent, of course, his ideas may be quite well enough; certainly a knowledge of perspective is a valuable asset to any painter, but there is more to painting a picture than that, and it seems particularly unfortunate that Mr. Bayes should choose to illustrate his article. Without the examples shown he might get by with it, but most of the examples are child-

From "The Architects' Journal," London



STAIRCASE
THE QUEEN'S DOLLS' HOUSE
SIR EDWIN LUTYENS, R.A., ARCHITECT

ish and some almost profane. We reproduce the star of the lot, Costermongers selling eggs as seen from a second story window. Now all this sort of nonsense is in reality not nonsense at all. It is too serious to be nonsense. If an individual cannot paint well enough to sell his work and, to save himself from starvation, plunges blindly into the depths of modernism or worse, he has merely sold his own soul for the proverbial mess of pottage or whatever it is that one sells one's soul for; in any event he has harmed only himself, and in separating from his money the fool who bought his picture he has only anticipated the probable act of some one else. But where this sort of thing is deliberately taught in the schools and receives official encouragement it is time something is done about it. More power to Mr. Emanuel.

From "The Architectural Forum"

DETAIL OF ENTRANCE PORCH
HOUSE OF HUNTER PERRY, ATLANTA, GA.
HENTZ, REID & ADLER, ARCHITECTS

From "The Architectural Review," London

COSTERMONGERS
(From an oil painting by Frank Medworth)

We also learn that there is being held in London an exhibition of Architectural Draftsmanship past and present, and we reproduce an interesting old example. Some such thing could well be done here in New York. The League exhibitions now run largely to photographs, but there must be somewhere a lot of originals that if brought together would make a corking show. Some of Stanford White's hasty sketches, Goodhue's pen and inks, Henry Bacon's ink drawings, Eggers' pencil sketches and water colors, Francis Bacon's drawings, Albert Ross' soft pencil line drawings, Seymour's rendering of the Perry Memorial, a rendering which Githens made years ago of a memorial in Newark. It would make a wonderful show, if some liberal patron of the arts could be found to finance it. There is one English magazine which is so complete and so interesting in its entirety that the only possible reference to it

is the advice to go and buy a copy, and that is *Architecture,* London, February, which is called the Old Regent Street number. The articles are good and illustrations which are mostly taken from old prints are extremely fine. It is a good number to save entire.

From "The Architect," New York

SOCIAL CENTER BUILDING, UNIVERSITY OF ILLINOIS, URBANA, ILL.

HOLABIRD & ROCHE, ARCHITECTS

Of our own magazines, *The Architectural Record* has a leading article by Fiske Kimball on Recent Architecture in the South, which is good and well illustrated with some interesting photographs of work by Armstrong and Koch, a good church by Hobart Upjohn, and a house in Charleston by Albert Simons which in its simplicity might well have been built a hundred years ago, and the Handley Schools at Winchester for which we have before expressed our admiration. All these are quite typical of the South; they seem to belong there; but in Mr. Fiske's illustrations there are others that do not belong. There are great office buildings, and banks, which are only types of what may be seen in every growing community from Maine to Florida and from New York to the Golden Gate; not so bad in themselves but desperately inappropriate to the South. In this country of ours can be found all varieties of climate, and it seems trite and unnecessary to remark that a house which is cool and charming in Alabama is out of place on a bleak New England hillside, and an adobe mission house with a projecting red tile roof which is characteristic and fitting in California is distinctly banal when reproduced in wire lath and stucco in the Middle West. There is so much charming old work in the South and it is so essentially appropriate to the locality that it seems the height of folly and bad taste to introduce modern innovations from the North. In this number Aymar Embury II has an article on the Morlaix column which is well worth reading.

The Architectural Forum, February, has as a leader an article by Howard Major on the Greek Revival, well illustrated, in which Mr. Major takes the position that what is generally known as Colonial Architecture was not an independent American contribution to the arts but that the Greek temple home was. Now, there is no question that our heavier and more important work was taken directly from the English Georgian, but there is also no question but that the smaller and more wooden development of it was essentially American. However that may be, the results are quite different; the one has charm and comfort, the other is cold, stilted and forced. That is too general a statement to be true in every instance; some of the temple houses have indeed remarkable charm, but this only occurs when the motives are treated with the greatest freedom and when the design of the house is enhanced by the treatment of the landscape and by the glamour of age. In this issue there is illustrated a quaint but most attractive little house in Atlanta by Hentz, Reid and Adler.

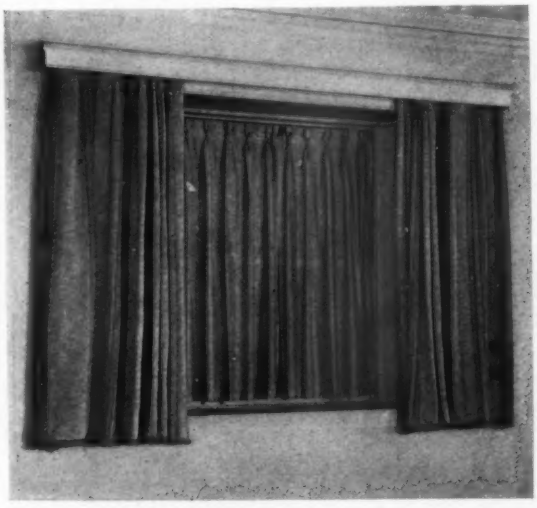
Architecture, for March, has some more of Samuel Chamberlain's clever sketches and *The Architect* for March shows some good photographs of a social center building for the University of Illinois by Holabird and Roche, a loathsome title but an interesting building.

The Journal of The American Institute of Architects for March has another article on Towered Cities by Georgiana Goddard King well illustrated and well written and there is Charles L. Eidlitz' talk on Debunking the Contract. What Mr. Eidlitz says is not new although it is very true, but we cannot see how his clause 'X,' the "Lost Clause," will have any more effect than those now generally in use. Every architect, every responsible architect, wants good subs, and his efforts to get them are usually a *casus belli* between him and the general contractor. It is no satisfaction to the architect to have the actual work done by a cheap man or by one who by an unwitting mistake is forced to do his work at or below the actual cost. More often than not the architect is requested to approve a sub he has never heard of. He makes inquiries and receives letters of recommendation which are not quite satisfactory, perhaps, but yet not adverse enough to warrant the rejection of the name. The general contractor says his estimate is based on the figure given and he must keep within it. What can the architect do but to approve the name with misgiving and hope for the best, and he either gets a poor job because the sub does not know what good work is and therefore cannot do it, or else he does get a good job and the luckless sub goes stoney broke. It is a bad business and all too common and our sympathies are with Mr. Eidlitz, with the sub and occasionally with ourselves.

INTERIOR ARCHITECTURE

The Part *of* Draperies *in a* Decorative Scheme

IN choosing materials for window draperies as a part of a scheme of interior decoration, the colors of the fabric must be given first consideration. All the colors appearing in the material must be studied in their relation to all colors included in the entire scheme of decoration. Next in importance to the color is the design or pattern itself. Then the texture and even the weight of the goods must be carefully considered. In determining each, it must be understood and remembered that the drapery material is a most important feature of the scheme of decoration, for the proportionately large amount of the same fabric which the draperies impart into any scheme gives it a prominent place in the scheme and its choice must be carefully governed in its relation to other materials



Small bay window treated as one opening by the heavy draperies. The side curtains, hanging to the sill only, are headed by a wood cornice, the mouldings of which are striped in colors taken from the fabric. The three windows themselves are hung with pongee curtains, arranged to draw

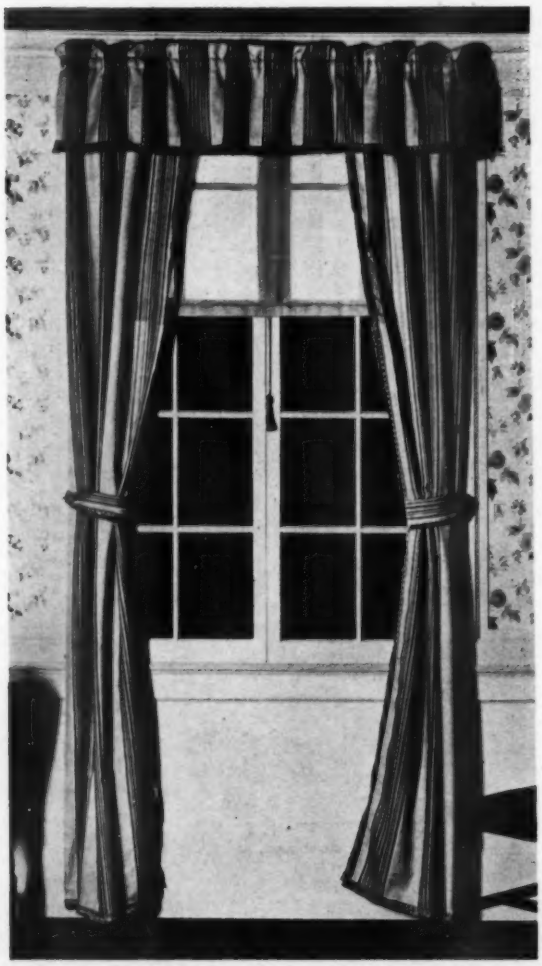
used, in color, design, texture and weight. Supplementary to these, but of real importance, are its qualities of durability, a wholly practical subject and one on which opinions may radically differ.

These various phases of relationship and their application to a decorative scheme have been discussed in a previous article and it is not necessary to repeat the details here. Suffice it to say that the principles of design,—proportion, repetition and subordination—are the controlling factors in determining the choice of the material for the draperies, as they are in the establishing of any other part of the interior design. Previous to the selection of the fabric, however, there appears an all-important consideration which is often, unfortunately, overlooked, to be reckoned with after the material has been chosen. That is the design of the drapes or the manner in which they are to be hung. The subject is of much more moment than is generally conceded to it. With proper study and thought in their relation to the rest of the architectural treatment of the room at the right time, the draperies may serve, in both design and color, as a means of tying together the various elements of the whole scheme, so that good proportion and perfect harmony may be established throughout. As a rule, the dominating color of the room color scheme (there always should be one) should be also more prominent in the drapery scheme than in any other. The greater or less degree of simplicity in which the draperies are arranged will have tremendous weight on the establishing of the degree of simplicity of the entire room. At the same time, with a little originality in line and color, the draperies may impart to a room a sense of individuality which is not otherwise possible. The

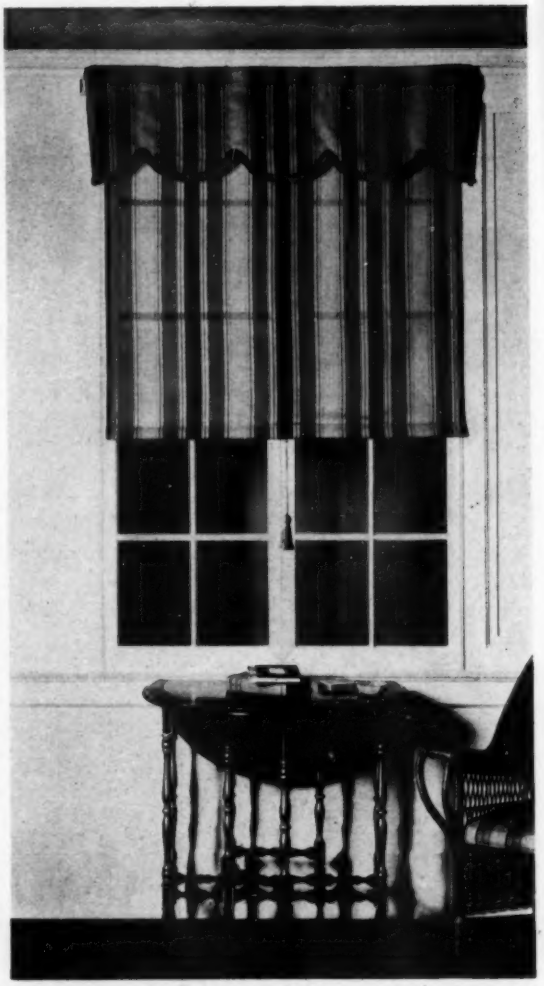
Sketch of draperies for a group of three windows, treated as one opening. The valance is embroidered in a special design in keeping with the curtains and is shaped to add interest to what would otherwise be a long straight line. It is hung flat to show the design best

window drapes, therefore, should be designed according to the prominent part which they take in the scheme of decoration.

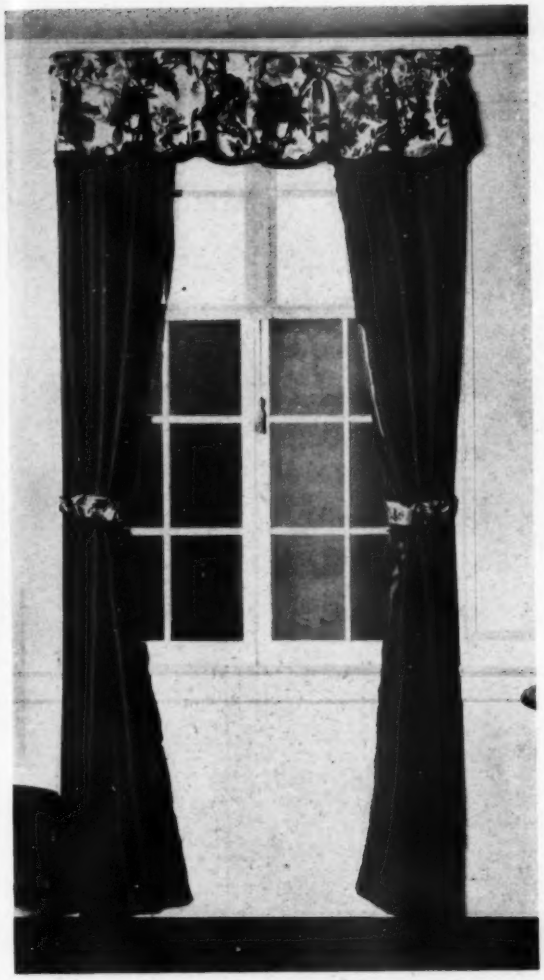
In studying the manner in which the draperies are to be hung, it is best to have in mind, in a general way, what kind of material is to be used, —its color arrangement, whether plain or figured goods, and if light or heavy weight material,— although definite selection may be made later. In these days when the market offers such an unusual field of materials, of practically all colors and designs, it is not difficult to find most any combination that may be desired. The three qualities—color, design and texture—affect decisively the manner of hanging. For instance, side curtains of a material which includes only a small proportion of the dominating color of the scheme of decoration in its make up, had best have a valance above of a plain material of the dominating color in order to establish good proportion in color distribution. Or, in using a fabric for side curtains with a large repeating pattern, a valance of the same material is eliminated, or, at least, it must be specially shaped to allow of proper placing of the pattern. Again, if, on account of small window openings, it is thought best to use a light weight goods for the curtains to permit of as much light as possible, and a valance is required to create better proportion to the windows, it is preferable to use the same material for the valance, but it should be hung only between the curtains so as not to double the material.



A striped material emphasizes the height of the window. Looping back curtains of a striped goods avoids the monotonous lines of the stripe. Trimming on the bottom edge of a striped valance should be of a contrasting color or tone to emphasize the horizontal line. Valances of striped goods should not be deep.



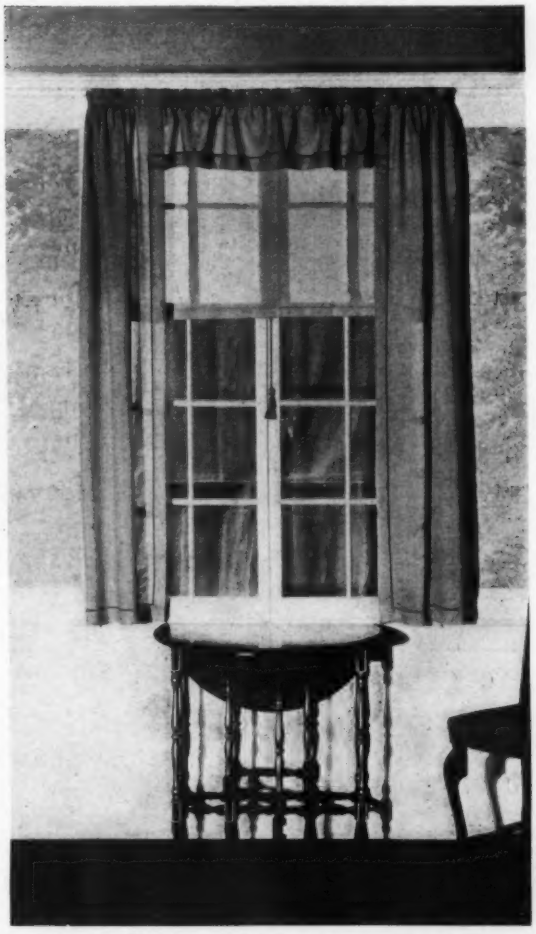
In informal rooms, or where windows are very small, a valance will often suffice for the draperies. In the case as shown the shade is made of the same mohair as the valance and a very unusual and pleasing effect is obtained



Plain colored curtains are often desirable, in which case a valance, too, of the same plain goods might disproportion the color distribution. A figured material, in which the color of the curtains plays a prominent part, can then be used for the valance. The decided contrast in material permits of similar method of hanging. A reverse arrangement of materials is also effective

So does the design of the drapes noticeably affect the choice of the fabric. For example, a scheme with nearly equal distribution of two or more colors in the other furnishings, requires draperies of a material in which the selected dominating color is especially prominent, to give correct proportion to the color arrangement, avoiding restlessness and monotony. Or, in a room where the walls are treated in panels of one color throughout, the hangings should be of a figured material. Again, in a scheme in which tapestries and mohair velvets are extensively used for furniture covering, a light weight fabric, as a linen, at once suggests itself for the draperies. These are merely illustrations and cannot be considered as rigid rules.

The old-fashioned festooned headings and draped lambrequins have now been replaced by common sense flat and shirred valances, and only in formal period rooms, where strict authenticity must be observed, are draped valances permissible. Simple informality, the basis of all modern designs, is just as evident here as anywhere. Straight hanging side curtains of well chosen material can often add to a scheme all that is necessary in line and color interest. Too frequently are valances inserted for unnecessarily "dressing up" the draperies. Generally, in rooms where the curtains are of a color or tone not far removed from the color of the wall treatment, side curtains do not need a valance. The reason for this is that the harmonious blending of the curtains and the walls should not be disturbed by the injection of a valance, which is always in contrast in line or in color to the curtains. A practical illustration of this idea is often seen in



When curtains are of a light weight goods it is best to hang them to the sill only. A valance of the same material, hung like the curtains, between them, is a very satisfactory arrangement. A line of embroidery in color makes a neat trimming for the plain mohair casement cloth

Jacobean rooms, where curtains of a deep, rich red, either a two-tone damask or a plain velvet, hang in folds to the floor with no valance or tie-back. The tones of the oak wall panels and the red hangings are very nearly equal, and contrast in color is very slight, for there is much red in the color of the oak. The injection of a valance, which would tend to stress interest in the draperies, already in color so harmonious with the walls, would not create sharp enough contrast to be striking.

The prevalent method of hanging curtains completely over the wood trim needs a valance of some kind to cover the awkward section of the trim which shows between the curtains at the top. The French manner of hanging curtains in a curtain-box, arranged in back of the trim, needs no valance, for the trim shows all around and acts as a suitable frame for the curtains. These curtains meet at the top and are looped back. At night, the tie-back is loosened and they completely shade the window. (The French to this day do not know what an American roller shade is.) There is no doubt of the practical value of this method of hanging. The placing of a cornice above the draperies is probably an outgrowth of the French scheme, although it acts only as a capping and not a frame.

INTERIOR VIEW, DETROIT GOLF CLUB, DETROIT, MICH.

ALBERT KAHN, ARCHITECT

A group of small windows is better treated as one mass by the heavy draperies and in this way good proportion is obtained. A figured material for the one pair of side curtains, hanging to the floor, and the same goods for the valance, make the four windows appear as one large opening. Each window is in itself treated with a pair of casement curtains to avoid any disillusion and also to act as a shade when drawn. The valance is shirred like the curtains

For other reasons than these, however, a valance is often desirable and it plays an important part in the decorative scheme. A valance tends to make a window appear lower and consequently wider, just as straight hanging curtains make a window appear higher and narrower. Such facts are familiar and need no repetition. But the design of the valance is not so easily determined.

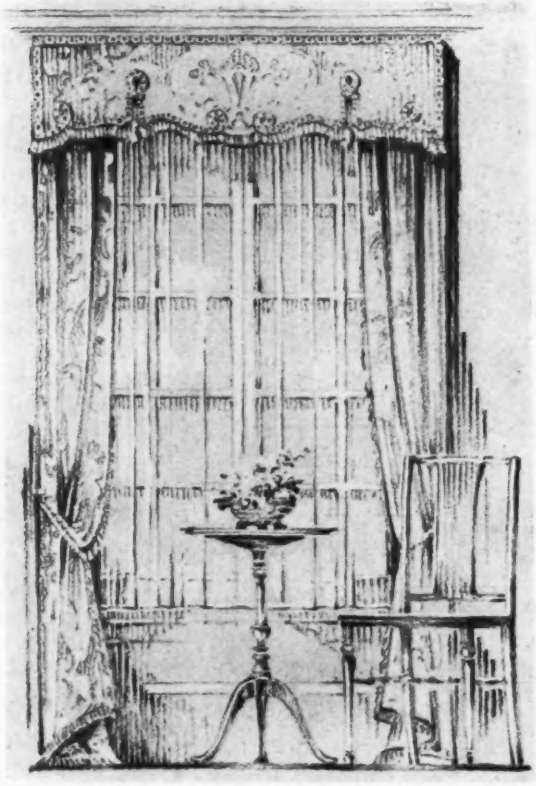
Rules do not carry much weight, as good taste enters so prominently into the decision and conditions in each case vary. Generally speaking, a shaped valance might be used to add interest to a scheme which may otherwise be monotonous by its many straight lines. Or a straight valance may so affect a badly proportioned window that its awkward shape would never be suspected. Two different materials used together in one scheme of draperies should generally be treated differently, further to carry out the contrast. Curtains and valance of the same material should be treated similarly. Unity of material calls for unity of design, while contrast in material calls for contrast in design. This rule applies more to the dressing up of designs than in creating optical illusions. When curtains are hung in pleats or folds, the valance, if of a different material, should be flat; but if of the same material, it should be hung in pleats. Should, however, high windows call for a valance to effect better proportion and, at the same time, the distribution of the colors of the scheme insist on curtains and valance of the same material, the rule no longer holds good. The valance must be contrasted in line, if not possible in color, as in this case, to serve its purpose of optical illusion. This is sometimes accomplished by a shaped flat valance, or by shaping the bottom and hanging it like the curtains. Depth of contrast desired, according to conditions, must settle this. Similarly, decided contrast in materials may be often all that is necessary, and they may both be hung in pleats or folds. But, as a rule, a valance of different material, especially a darker material, is better flat. A valance of a figured material placed over curtains of a plain goods makes the window appear higher, and *vice versa*.

Correct draperies for a formal French room. The curtains and valance are of a sea-green taffeta, trimmed with a green silk fringe. A border, crocheted in colors, is applied to the curtains. The valance is surmounted by a wood cornice, glazed in a shade similar to that of the taffeta

There are frequently windows where valances are not only unnecessary, but out of place. This applies especially to wide and low windows, where valances tend to emphasize the proportion to an awkward extreme. As already mentioned, side curtains only look better where the trim, or part of it, shows all around, and, for this reason, they are often hung on the trim so that part of the moulding shows to act as the frame. When the trim continues to the floor, side curtains had best reach to the floor also, but when the trim stops at a sill, the curtains had best hang only to the bottom of the sill. Under certain conditions of proportion of the windows, these rules can no longer be applied.

In informal rooms, under certain conditions, especially a low ceiling and a low window, draperies can be confined to a valance alone. In such cases, a figured or striped material is best. A rather novel arrangement is to make the roller shade of the same material as the valance. It is often desirable to embroider a special design on some material for a valance. In this case the shape of the valance can take any line required and the design placed in conformity to the shape. Such valances should always be hung flat to give the best effects.

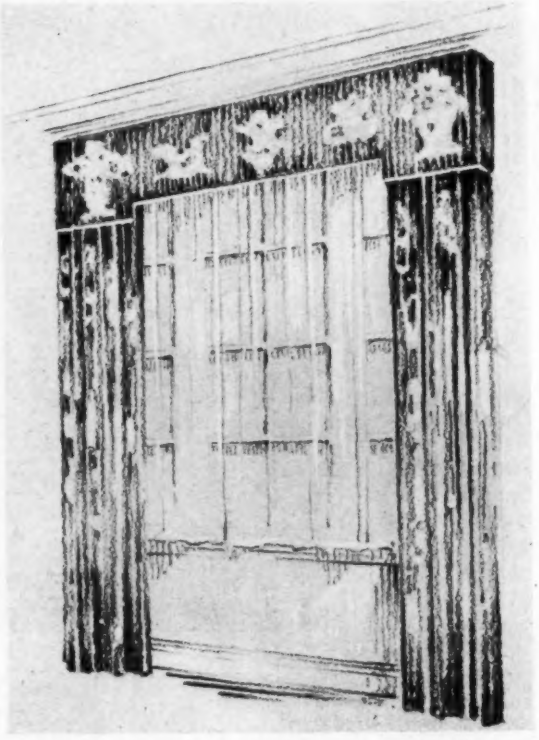
In these days of informal designs, one form of draperies is no more suited to one room than another. Where a more formal aspect is to be observed, the line of the shape of the valance can readily be made to portray this element, just as an authentic reproduction of French drapes carries out the formal feeling of a French period room. But, as a rule, the type of room has much



The shape of the valance is determined more by the type of room than anything else. With a delicately shaped line and elaborate trimming, the curtains look better looped back

more bearing on the selection of the material than on the manner of hanging. And the kind of material is so much more dependent on the architectural scheme of the room than on the type of room that, looking at it from all angles, it is difficult to comprehend how anyone can attempt to design an architectural interior without including the drapery scheme. Heavy weight materials, as tapestries, damasks, and various weaves of velvets, are more or less considered "first floor" goods, for living rooms, dining rooms and halls, while linens, silks, and cretonnes are more generally known as bedroom materials. No one can deny, however, that in many a bedroom a damask is the proper drapery material, and frequently a linen is just the thing for a dining room. This is but another proof of the importance of the draperies in the scheme of decoration.

A new departure in selling drapery materials has recently been inaugurated by a large wholesale house in New York City. They have on exhibition in their showrooms an assortment of made up drapery schemes, of plain and figured goods, with flat, shirred and pleated valances, or no valance, curtains tied back and hanging straight, hanging to floor and to sill, all made from their stock materials. They take orders for making up any of their own goods in any of these schemes of hanging. Several of the illustrations shown in this article are made from these models. The advantage of such a scheme is the opportunity which it affords the architect and upholsterer to see actual effects of various materials when hung. Practically any combination of materials and arrangement may be tested, for they are readily



Straight hanging curtains are more appropriate with a simple shaped valance. In this case, a repeat of the pattern on the curtains has been applied as decoration to the valance

interchangeable, and thus the architect may better visualize his complete decorative scheme.

Architects are invited to correspond with the editor of this department. Acknowledgment is made to the following firms for their courtesy in supplying illustrative material: Carl Bier, Inc., Lesher, Whitman & Co., Inc., Orinoka Mills, W. & J. Sloane.

ECONOMICS *as* RELATING *to* ARCHITECTURE

The Outlook

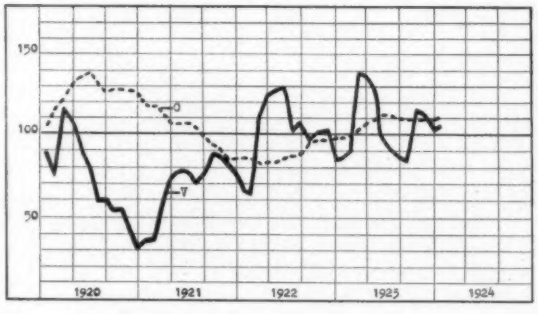
THE surge in the volume of contracts awarded during the late Winter months has furnished increasing assurance of very heavy building for at least the first half of the year. Buying of materials in anticipation of a lively Spring demand has already resulted in firmer materials markets. Costs are slowly creeping upward. If Spring construction actually appears in the volume indicated by the extraordinary activity of the months just passed, the probabilities of a threatening rise in costs and a later check in the volume of building are very strong. Present appearances more than suggest that during the next three months the amount of building may again closely approximate the industry's capacity of production.

The Statistical Position

The dollar value of new jobs begun in January in the 27 states reported by the F. W. Dodge Corporation was the heaviest ever recorded for that month. Normally January's volume of contracts awarded falls about 3 per cent under December's, yet January's recession has been slightly less than the ordinary seasonal variation peculiar to that month. Its total volume of business was about 20 per cent ahead of January a year ago.

February's total construction usually exceeds the dollar value of jobs begun in January by about 2 per cent. Building in the earlier weeks of February was heavy, although in the closing days of the month the volume of contracts awarded slackened. Final reports for the month had not been made public at this writing. March's gain over February in the normal year is about 30 per cent and the industry's accumulated momentum suggests that this seasonal movement will probably be sustained.

COSTS AND VOLUME OF BUILDING



Both costs and the volume of building are increasing, and the trend of each, as shown by the above curves, is upward. The volume curve (V) is at the highest point it has been in any January on record. It represents the square feet of floor space in the contracts awarded in the 27 states reported by the F. W. Dodge Corporation. The cost curve (C), which is only slightly under the highest point reached in 1923, is the cost index published by the *Engineering News-Record*. The basic period is the average attained by each index in 1919

Measuring the volume of building by the total square feet of floor space in the new jobs undertaken, the above showing made by the dollar value of this construction is confirmed. Using this index, the total square feet of floor space, which, by the way, possesses the advantage of eliminating the influence of shifting price trends, contracts awarded during the last four months have run some 18 per cent ahead of the corresponding period last year. Statistically, the year has made an extraordinary beginning.

Duration of Present Demand

The demand for new building and construction is, obviously, in a high plane. Its duration yields itself only to approximation and conjecture. That the degree of its intensity will run above normal throughout 1924 is certainly within the limitations of probability. That it is capable of easy conversion into hysteria is obvious from the very fact that it is already soaring at rather uncommon heights considering the time of year. The distance between the present high plane of activity and what might be called hysteria could conceivably be covered by a rush of construction similar to that released in the Spring of 1923.

Demand is a very complex force, and its trend is shaped by the play and interplay of numerous aiding and opposing factors. But as applied to the present building and construction situation, the arteries of the existing demand may be traced back to two principal sources. From 1914 until 1918 the capital ordinarily invested in building and construction was spent in the prosecution of war. A redistribution and concentration of a greater part of our population on and near the sites of army cantonments did not accentuate the growing deficiency in shelter space, a shortage

that was permitted to accumulate during the entire period of hostilities. It was after the armistice, when our population began to drift back to its former abodes or decided to accept permanently its new habitations, that we realized we had neglected our year to year construction requirements. In 1919 and 1920 an effort was made to meet the deficiency, but high post-war costs were an effective barrier. A condition had arisen in which the units of our social order seeking shelter had greatly exceeded the units of shelter then in existence, and much discomfort, deprivation and suffering were the inevitable consequence. For two years now the building trades have been operating almost at capacity to relieve the situation, and the shortage has been substantially reduced. Its proportions are not accurately known, but many and various estimates have been made of its dimensions. These approximations all differ widely, but they have one feature in common, that another year of active building, similar to either that of 1922 or 1923, will practically erase the existing building deficit, the urgency in the situation having been substantially eliminated already.

Now, it is impossible to determine the exact time when the supply of the units of shelter caught up with the number of existing social units that were urgently seeking any kind of covered space. That exact time is immaterial, but because the cry for shelter is not as urgent as it was, it is reasonable to suppose that this, the first phase of demand, has definitely passed.

Another more subtle and more elusive phase has sprung to fill its place. The rising standard of living has tended to make existing housing accommodations inadequate and unsatisfactory. Thus the rising standard of living creates a need, and this need can usually be coaxed and crystallized into actual demand when confidence is strong, when good times prevail, and when building costs are not inflated. This second phase of demand, obviously, is not as dependable as the first. It is shifting and whimsical, and it relies rather heavily upon the normal balance in the relationships of such underlying considerations as confidence, general prosperity and costs. So the whole force of demand seems to be flowing away from a question of urgency to a consideration of price. Price, or cost, is beginning again to control more effectively and directly the balance between supply and demand. And it is wholly proper that it should, for the probabilities of over-production in the building and construction industry are slowly taking shape.

Only the necessary structures should be erected at this time. The industry is carrying a very heavy burden, and the mistake of piling on an excessive load would be easy to make at this time. As with a man overwrought and exhausted, the consequences are always a set-back, a readjustment, and a period of recuperation. A moderate amount of building would mean less likelihood of ultimate over-production. Costs would not advance so acutely, and a longer period of employment would be assured for everyone. The industry cannot afford to let demand get out of control and overreach itself.

The present supply of construction varies both as to types of buildings and to localities. For example, commercial, office and hotel structures seem to have more nearly approximated demand than many other types of construction. The heaviest deficiency appears to be in residential building, medium to low priced dwellings. Similarly, the call for the higher class apartments is not as great as it was; on the other hand, there is a rather pronounced demand for low priced apartments and tenements. Conditions are equally spotty when comparison is made of localities. Demand for building in the Middle Atlantic and New England states has been running in heavier volume than in other sections of the country. In the Central States, particularly, contracts awarded have shown a disposition to lag. Much "evening up" of these irregularities has yet to be accomplished, and the situation at the close of this year should be more balanced in this regard than it is at the present time.

There is little in the situation today to inspire and encourage the speculative builder. A prolonged period of heavy building and heavy demand are only speculative probabilities. Beyond the close of 1924 the degree of uncertainty increases, for probably by that time the deficit will have been practically eliminated. Robbed of its most powerful support the market for improved real estate can do nothing more than gradually to assume a weaker undertone. An impending and perhaps menacing rise in costs adds its peril to that of a real estate market which has apparently passed its peak, and the two threaten a combination that will stint the builder's profits. To build today, at prevailing prices, staking all on the permanency of high rents, a quick turnover of the property six months or a year hence at higher prices, would be to walk deliberately into a fire attracted by the brilliant tints and bewitching hues. The decision to build should certainly turn upon other more stable and substantial factors, factors offering of themselves a reasonable assurance of profit.

Rents are high, but are apparently growing more stable. It is reasonable to expect rents to fall when the demand for shelter strikes a balance with the supply. Rents are, however, a very sluggish index. They move very similarly to wages, displaying a great deal of alacrity in their ascent but equally reluctant to leave the heights attained. The balance of supply and demand in the improved real estate market will be a well matured certainty before rents reflect the fact. Many

conservative students maintain that in their respective localities certain types of structures are in ample supply. The fact that there are few tenants in these structures is cited as undeniable evidence. Yet rents in these localities have not been readjusted. Neither has the market values of these properties reflected this ample supply. Demand in more active lines, oftentimes, supports the general market, just as a theatrical star single-handed sustains and preserves the rare charm of a piece of capital entertainment and diversion, though the minor parts be weak. No one group is closer to these prevailing conditions in the building industry than the architect, and he should not allow himself to be caught napping when demand in these leading lines begins to drag.

A business debacle is most certainly not in prospect. Serious depressions in this country have always had as a forerunner inflated credit and a high, strained, and feverish money market. Other symptoms have been a protracted era of high and inflated prices, driven to rather dizzy elevations by wild, speculative activity. These symptoms simply do not exist to an alarming degree in the general industrial situation today. The probability of a general depression in business is remote. Prices of improved real estate, however, have undergone little deflation since the war period. To expect them to sustain their high levels indefinitely would be equivalent to wishing to eat one's cake and have it too. In other lines of business the severity of the readjustment period has been about commensurate with the excesses previously enjoyed. Deflation, unfortunately, embodies that bit of old philosophy, "as ye sow, so shall ye also reap."

The Industrial Outlook

Business, to the prosperity of which building and construction must ultimately look for the greater portion of its future support, has been enjoying reasonably good times. Because cost factors have been firm—and in some instances slightly rising—profits have had to depend for their existence on a heavy turnover of merchandise with a narrow margin between cost and selling price as the reward for doing business. The increasing rate of production of basic commodities, together with record car loadings for this season of the year, indicates that the volume of sales, generally speaking, is not only gaining, but that this merchandise is moving in equally heavy amounts into consumptive channels. This is a salubrious condition, for it is an indication that business men are not going heavily into debt for the accumulation of inventories.

The whole industrial aspect, however, is spotty, and the profitable activity is poorly distributed. The iron and steel, automobile, and building construction industries are the centers of heaviest production. Business in many other lines is lagging. This rather uneven distribution of profitable endeavor has been further aggravated by a similarly inequitable allotment in the increases of incomes. The repeated boosts in wages offer the most outstanding instance of this. The salaried man, the farmer, and the owner of the less profitable industries have received few of the benefits of these good times. A third unsatisfactory feature has been the lack of equilibrium in price relationships. The purchases made by any one individual are affected by the relative price of the commodities he buys, and his total purchases are governed largely by the prices of the commodities he has to sell. It is a complex system, and very sensitive to changing volumes and methods of production which result in a continual shifting of price levels. The war and reconstruction periods have so shifted and changed the emphasis on the amount and character of manufacture of various commodities that the old relationship of prices has been warped beyond all recognition. These conditions obviously result in unevenly distributed purchasing ability, and narrow and irregular markets.

The progress of the present rate of consumption is not threatened, as long as employment is heavy, but it is difficult to see how this discrimination in purchasing power can support any great advance in commodity prices. A mild rise in commodity prices, nevertheless, is in prospect. Costs are high and unyielding, and if merchandise is to be produced at a profit, sales must be made at correspondingly high levels. Again, inventories are light, and with orders increasing as they have been in many industries during the past month, a firmer price level appears inevitable. Furthermore, easy money, one of the most effective stimulants of rising values, is in good supply and adds its bit to a tempting set of factors favoring stronger prices. Costs show no inclination to yield their high place. As long as employment continues high and the necessaries of life advance, the expense of doing business will remain firm, and may move higher.

Unfortunately the disheartening political outlook has been so confused with industrial prospects that confidence has often faltered, and a great pall of uncertainty has settled over the whole field of business. It has left the ultimate outcome of the present tax legislation in doubt. No one can definitely foretell the full effect that the oil investigation will have upon the country's business. And the presidential booms, which were either taking definite shapes or falling by the wayside, have been halted, and many of them robbed of the fruits of earlier effort. A campaign of bitter accusation and arraignment of personalities and characters appears to be immediately ahead. Thus confidence is disturbed and caution

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increased. The significance of this interruption is psychological, for the most part, and not economic; nevertheless, the industrial movement will probably be somewhat restrained.

Costs Are Advancing

Construction costs are again climbing upward. The cost index published by the *Engineering News-Record* had on February 1 advanced about 1 per cent since the first of the year, and was only 1 per cent under the high point in 1923. The March figure had not appeared at this writing, but it is expected to reveal a moderate advance over the February level. Strength is being contributed by both components of the index, wages and materials prices, although the recent gains of the latter have been the more pronounced.

The outlook for the materials market is a strong one indeed. Its statistical position is an especially favorable one. Stocks, although not heavy, are regarded as adequate, unless the rush of Spring building develops into a torrent. Dealers' inventories have been light, and the purchases that have been made in anticipation of Spring requirements have resulted in mild advances of materials prices. Cost factors are still firm and unyielding, and the temptation of that most enticing of all indulgences, easy money, may result, if a great demand develops, in a wave of buying that will send prices scurrying to higher levels. Purchases thus far, however, have been conservative.

The main trend in wages is still upward. The numbers of increases made in January and effective February 1, according to *The American Contractor,* were heavier than at any other time in the past four months. Employment is full, and skilled tradesmen have been scarce. With a heavy potential demand on the threshold, skilled craftsmen particularly may be difficult to find. If there is much imperative building in hand or on schedule, the trade may again hear of bonus payments.

Lower labor costs are an increasing improbability. A heavy potential demand for labor, a rather stinted supply, and the gradually rising costs of the necessaries of life point distinctly to the growing likelihood of still higher wages. Some of the Chicago crafts are reported already to be seeking increases. Lower wages can come about only through an increase in the supply of workmen, or a decline in the amount of building undertaken. Higher costs of both wages and materials will result ultimately in the checking of demand that may or may not reappear at a later date.

The abundant supply of credit at easier rates has had a favorable effect upon the mortgage money market. The restrictions placed upon loans last Spring have been modified somewhat, apparently because money has been more plentiful. Certainly the valuations of improved real estate and the cost of building have not been sufficiently reduced to warrant a change in the loaning policy outlined by conservative bankers last Spring. Speculative building should be discouraged, and the probability of a later readjustment in values should not be forgotten. The careful banker will insist upon ample protection in the form of sufficient equity to absorb a moderate future decline in values. He may refuse to loan as great a percentage of the fair valuation of the property as formerly; or he may construe the fair valuation as an appraisal based upon pre-war and not 1923 prices. At all odds he should protect his depositors against a possible decline in values.

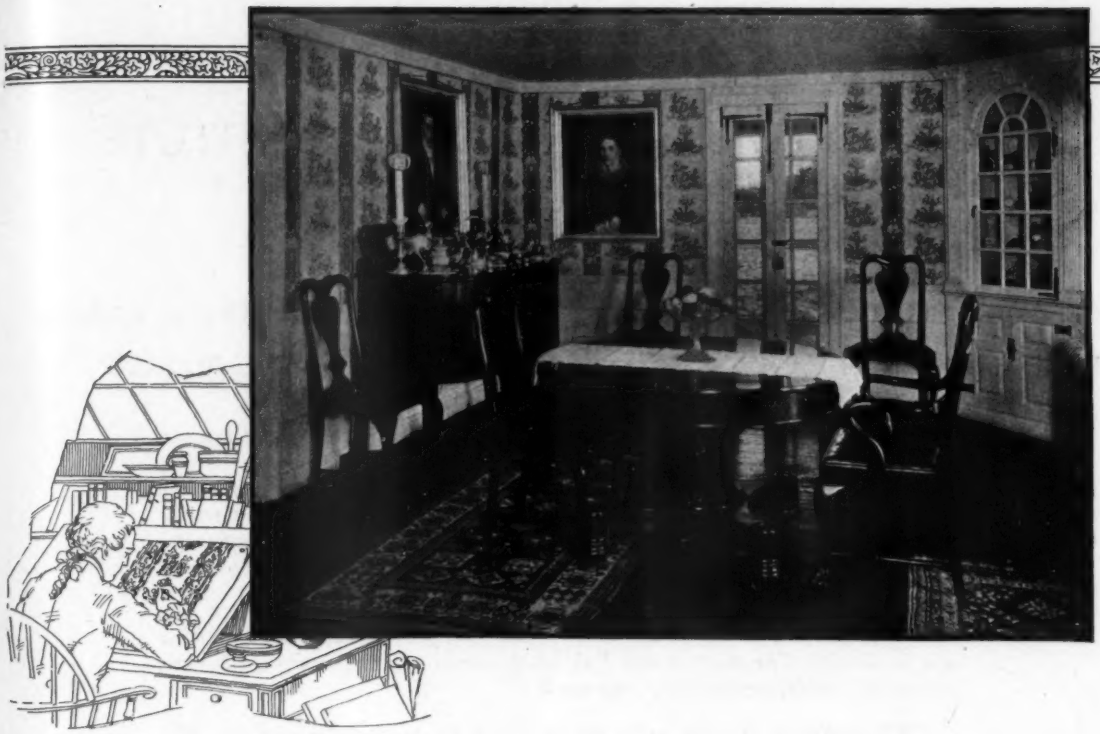
CITY PLANNING AND BUSINESS PLANNING

ADVERTISERS could learn much from the city planning movement, states *Printers' Ink* in a recent issue. Many cities are adopting city plans and are guiding the development of the physical municipality accordingly.

In laying out a plan of this kind, it is necessary to look far into the future and to make provisions for the needs of the city 100 or even 200 years hence. Most of our large cities have been allowed just to grow, like Topsy, in a rambling, planless way. As a result, these cities not only lack the beauty which they might have, but also what is even worse, they are not able to administer to the social and economic requirements of their large populations to the best advantage.

We learn from the Department of Agriculture at Washington that the prevailing winds play, or at least should play, a big part in the laying out of cities. Springfield, Ill., is one of several cities that is at present recognizing this fact in a city plan which is under way. The forty-four year weather record of the Government's Weather Bureau for Springfield shows that the prevailing winds in that place came from the Northwest in January and February and from the South during the other ten months. For this reason the plan is to locate industrial enterprises in the Northeastern part of the city. Thus the smoke and gases of the factories will blow over the residential section for only a short period each year. A little thing, you may say, but how it contributes to the health and comfort of the residents of the town.

As we said, advertisers could learn a lesson from the city planners. A common mistake that advertisers make is not to look far enough into the future of their businesses. They work too much from day to day and fail to prepare for the big developments that are sure to take place in their markets ten or twenty years hence.



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The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, The American Architect and The Architectural Review.

OUTLINE OF TENTATIVE SPECIFICATIONS FOR PRESSURE WATER FILTER

Serial No. 85.10

I. CONTRACT AND LEGAL

1. Parties:
2. Drawings:
3. Agreement:
4. Terms of Payment:
5. General Conditions:
6. Regulations and Codes:
7. Standards:
8. Patents:

II. ECONOMIC

9. Scope of Contract:
   - 9-1. Work Included:
   - 9-2. Schedule of Work Included:
   - 9-3. Schedule of Work Not Included:
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V. MATERIALS

18. Properties, Chemical and Physical:
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VI. DESIGN AND CONSTRUCTION

21. Shop Work:
    - 21-1. Filter Units, Capacity, etc.:
    - 21-2. Filter Tanks:
    - 21-3. Filter Tank Supports:
    - 21-4. Filter Piping:

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21-10. Sight Glass on Filter:
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VII. SCHEDULES

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ARCHITECTURAL PIRACY

LUTHERAN CHURCH ART, a brochure printed from time to time in the interest of better Lutheran church architecture, waxes wroth in its issue of January over what it calls a case of architectural piracy. This article states in part:

A charming building was erected a few years ago by a noted firm of Eastern architects, for a Dutch Reformed congregation in New York. Later it passed into the hands of the Presbyterians. It is one of the most exquisite examples of graceful design in all New York. The good old *Architectural Review,* in its lifetime, published a number of working drawings and details of this superb church, in the April, 1910, issue.

In the present year of grace, the identical design, with a few crude variations in structure, has been reproduced by a firm of Western architects for a Lutheran congregation, and now rears itself in all its flaunting, hypocritical impudence, above the tree-tops of a small Western town. The imitation is so slavishly exact that a small child, having seen the original, may recognize the cheap "replica" at a glance.

Almost every line, and every small bit of detail have been reproduced slavishly. A long flight of steps was added, and an ill proportioned cross, a clumsy handling of the façade's parapet wall, and an apparent widening of the nave may be seen—all fatal to good design. And, worst of all, it is a structural lie. Twenty tons of steel have been used in the imitation, we are told, and the walls have been tortured into a semblance of honest Gothic construction. And where the original is crisp, clean-cut, sparkling with grace and freedom, the brutal replica is hard, harsh, stiff, and as devoid of feeling as a new tin can.

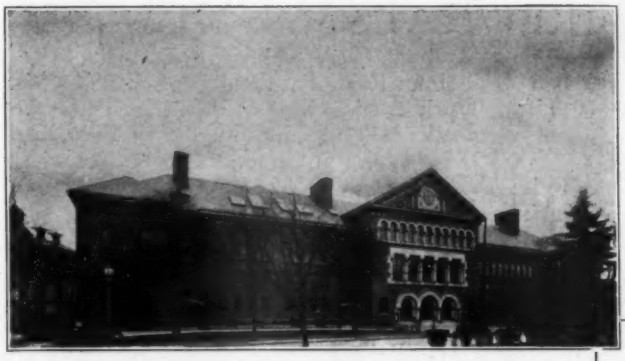
Architects call it a "dead swipe." To pirate another person's book, or poem, or painting, is a criminal offense. How an alleged Lutheran congregation, or a firm of architects can stop to architectural piracy, must forever remain a mystery. It cannot be excused on the grounds of ignorance, for the original church has been pictured again and again, both in professional journals, and in books well known to every clergyman and building committee.

Stringent laws prohibit literary and musical piracy. Architectural piracy is equally reprehensible, and ought to be prohibited by law. A politician (well known on the lecture platform) was most properly taken to task a few years ago for stealing a design for his home; and the pictures of the original and the "replica" were printed side by side in an architectural journal.

Henry Turner Bailey, that happy genius who can pick up a paving brick and deliver a most interesting lecture on it, is fond of saying that architecture is "the adequate embodiment of an idea." If this be true,—as it certainly is,—what sort of spirit is back of a congregation that has the brass to steal the design of another church? If it steals members as successfully as it steals designs, and if its inner motives are as insincere as its sham structural tricks, and hypocritical pretense of honest construction and structural forms, then something interesting ought to happen in this connection, and that right early!

SAVING THE ABBEY FLOORS

IN order to preserve the floor of the Westminster Abbey Chapter House in London, visitors are requested to remove their walking shoes and put on sandals before entering. The floor in the historic building dates back to 1290. The rule is enforced strictly and there is a watchman at all times to see that it is carried out. A generous supply of sandals, including all lengths and widths, is kept on hand.



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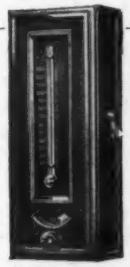

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PERSONALS

Ralph Wilson Weirick, architect, has moved his office from 402 Madison Avenue to 70 Fifth Avenue, New York City.

Wilford S. Bogue, architect, 206 Wheat Building, Fort Worth, Texas, would appreciate having manufacturers send him catalogs and samples.

It is announced that D. S. Douglass, architect, 83 Kenyon Street, Hartford, Conn., would appreciate receiving manufacturers' catalogs and samples.

Clifford F. Reichert, architect, has established an office at 1003 Starks Building, Louisville, Ky., where he would be pleased to receive manufacturers' catalogs and samples.

William E. Spink, architect, announces the opening of his office at 511 Canal-Commercial Building, New Orleans, La., for the general practice of architecture.

Andrew J. Riddell, architect and engineer, has established his office in the King Building, 350 Ouellette Avenue, Windsor, Ontario, Canada. Manufacturers are requested to send catalogs and samples.

Lockwood, Greene & Co., Inc., Lockwood, Greene & Co., engineers, Lockwood, Greene & Co., managers, announce the removal of their New York office to the Pershing Square Building, 100 East Forty-second Street, New York City.

Hugh A. Kelly and Leroy A. Cowan have established offices for the practice of architecture and engineering at 341 Bloomfield Avenue, Montclair, N. J. Manufacturers' catalogs and samples are desired.

M. Margolin, architect, has moved his offices from 1384 St. Marks Avenue to the Home Title Building, 383 Jay Street, Brooklyn, N. Y., where he would be pleased to receive manufacturers' catalogs and samples.

Arthur Gruenberger, formerly of Vienna, Austria, is now with the firm of Samuel Lightner Hyman and A. Appleton, architects, 68 Post Street, San Francisco, Cal. Manufacturers' catalogs and samples are desired by him.

We are advised that Herbert B. Beidler, architect, has moved his office from 10 South LaSalle Street, Chicago, Ill., to 813 Ulmer Building, Cleveland, Ohio. Manufacturers are requested to send literature to the new address.

John Reid, Jr., architect, announces that after April 1, his address will no longer be the First National Bank Building, San Francisco, Cal., but that he will be located at 60 Sansome Street, that city.

The recent competition for the new Municipal Building at White Plains has, we learn, been won by Joseph H. Freedlander of New York. The architectural members of the jury were Professor William A. Boring of Columbia University and Charles A. Platt.

Lai Thomson, of the Building Construction Department of the Sai Kwong Estate, Loan & Savings Co., Ltd., 58-64 Sap Pat Poo Street, Canton, China, would appreciate receiving catalogs, price lists and business literature of manufacturers of building materials and equipment of all kinds.

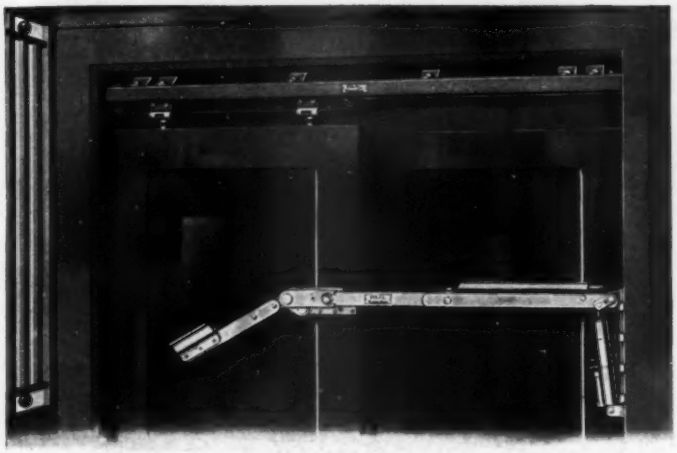
Sunderland & Besecke, architects, 406 Interstate Building, Kansas City, Mo., have dissolved partnership. Mr. Sunderland will continue practicing at the old address. Walter A. Besecke has opened an office at 611 Title & Trust Building, Kansas City, Mo., for the practice of architecture. Manufacturers are requested to send catalogs and samples.

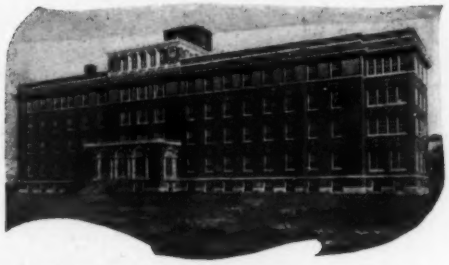
E. B. Van Keuren & Co., engineers and mill architects, and William L. Denham, architect, George E. Denham, associate, announce the consolidation of their offices for the practice of architecture and engineering under the firm name of Denham, Van Keuren & Denham, architects and engineers, Age-Herald Building, Birmingham, Ala.

Oren R. Thomas, Donald M. McLennan and Carl S. Thomas, formerly of the organization of the late William Gordon, A.I.A., have taken over the uncompleted work and have established a partnership for the general practice of architecture under the firm name of Thomas, McLennan & Thomas, 527 West Seventeenth Street, Des Moines, Iowa.

Announcement is made that E. S. Draper, landscape architect and engineer, located at 11 East Fifth Street, Charlotte, N. C., and 681 Fifth Avenue, New York City, has opened a branch office at 101 Marietta Building, Atlanta, Ga., for the general practice of landscape architecture and engineering, under the management of C. G. MacKintosh. Manufacturers are requested to send catalogs and samples.

QVALITY LEAVES ITS IMPRINT





No Banging Doors Here

The Wesley Hospital, Wichita, Kansas, is one of the many hospitals in which R-W IDEAL Elevator Door Hardware has been installed. Every advantage of "Silence is Golden" is attained through the choice of this equipment.

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R-W IDEAL Elevator Door Hardware

Silence in elevator door operation is as important as positive, safe and speedy action. This is especially apparent in hospitals, hotels and apartment buildings where banging, clattering doors cannot be tolerated.

The choice of R-W IDEAL Elevator Door Hardware is unquestionable assurance of silence and satisfactory service. The proven superiority of this equipment is responsible for its almost universal acceptance as the standard elevator door hardware.

A complete, time-saving technical folio of elevator door installations will be forwarded free to any architect. This is the only book of its kind from which actual blueprints can satisfactorily be made.

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In addition to automatic door controllers and checks, R-W IDEAL Elevator Door Hardware includes hangers for single speed, two-speed and three-speed doors; for doors in pairs, operating from both sides, and for combination swing-out doors.

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(608)

BOOK NOTES

THE SMALL AND THE SMALLER HOUSE

THE small house still holds the attention of many persons and the prospect is that it will receive more consideration as time passes. Certainly there is no kind of structure that needs more skillful study. The improvement in the architectural design of this type of buildings has been marked and it is to be seen in all parts of the country. It cannot as yet be attributed to any special effort on the part of the architectural profession, but rather to a group of publishers of popular publications and plan services.

The Community Arts Association of Santa Barbara, Cal., instituted a competition for designs of small houses to cost not more than $5,000. The competition was held in accordance with the code of The American Institute of Architects. Fifty-six architects submitted 62 designs. These have been published and are grouped into 37 designs of Spanish California type, 10 of English rural stucco type, 11 of English stucco type and 4 of wood exterior type. Each design is complete on one plate which includes a plot plan 50′ x 150′, floor plan, perspective, one or more elevations and, in some instances, sections and details. A brief description accompanies each design. They are in no sense working drawings, but give sufficient information to judge of the desirability of the design. In addition, a text of four chapters is included, devoted to Hints to Home Builders, Ways to Lower Home Building Costs, Financing the Small House and Basis of Architectural Comment.

The whole tenor of this book is extremely businesslike and free from the sentimentality which all too often is attached to small house publications. It will be found of real value to architects and prospective builders who may be interested in that type of buildings. The illustrations are excellently reproduced and the book is well printed on suitable paper.

The Smaller House illustrates English post-war work, with a few pre-war examples. It well emphasizes the changed tendency in English domestic architecture of this class. It becomes immediately clear that there is a difference, subtle perhaps, but radical. Economic conditions are such that they have been compelled to consider essentials only and to rule out every kind of trimming. As a result, design has become clarified, architectural hyperbole has disappeared, and a new rule of simple building is being established upon a basis of tradition. Finally, the fact that effects have had to be obtained without extra expense has led to a sudden and astonishing discovery of color. The nineteen-twenties in England have discovered paint and light and are beginning — tentatively, experimentally — to use them. Two things seem certain: the architectural profession is consolidating and the public is becoming interested in architecture. "There are signs," said Sir Edwin Lutyens recently, "that for British architecture the next half century may be one of great achievement."

The houses are illustrated by plans and both exterior and interior photographs. They vary from the trim regularity of the Georgian model to the informal type that possesses that attraction which is all too often missing from American domestic architecture.

Fifty-two buildings are illustrated, designed by 45 architects, among whom are many leaders of the profession. The prices are tabulated and vary from 6¾d. and 2s. 1d. per cubic foot and £650 to £8000 based on 1924 costs. This book is well worth a place in the library of an architect who designs the better class of residences and it conforms in illustrations, printing and make-up to the high standard of its publishers.

Small House Design. Sixty-two designs of houses costing about $5,000. *Collected by Community Arts Association of Santa Barbara, Cal.* 10½ x 14 *in., 154 pages. H. S. Elliott, 25 Pacific Avenue, Piedmont, Cal. Price* $5.00 *prepaid.*

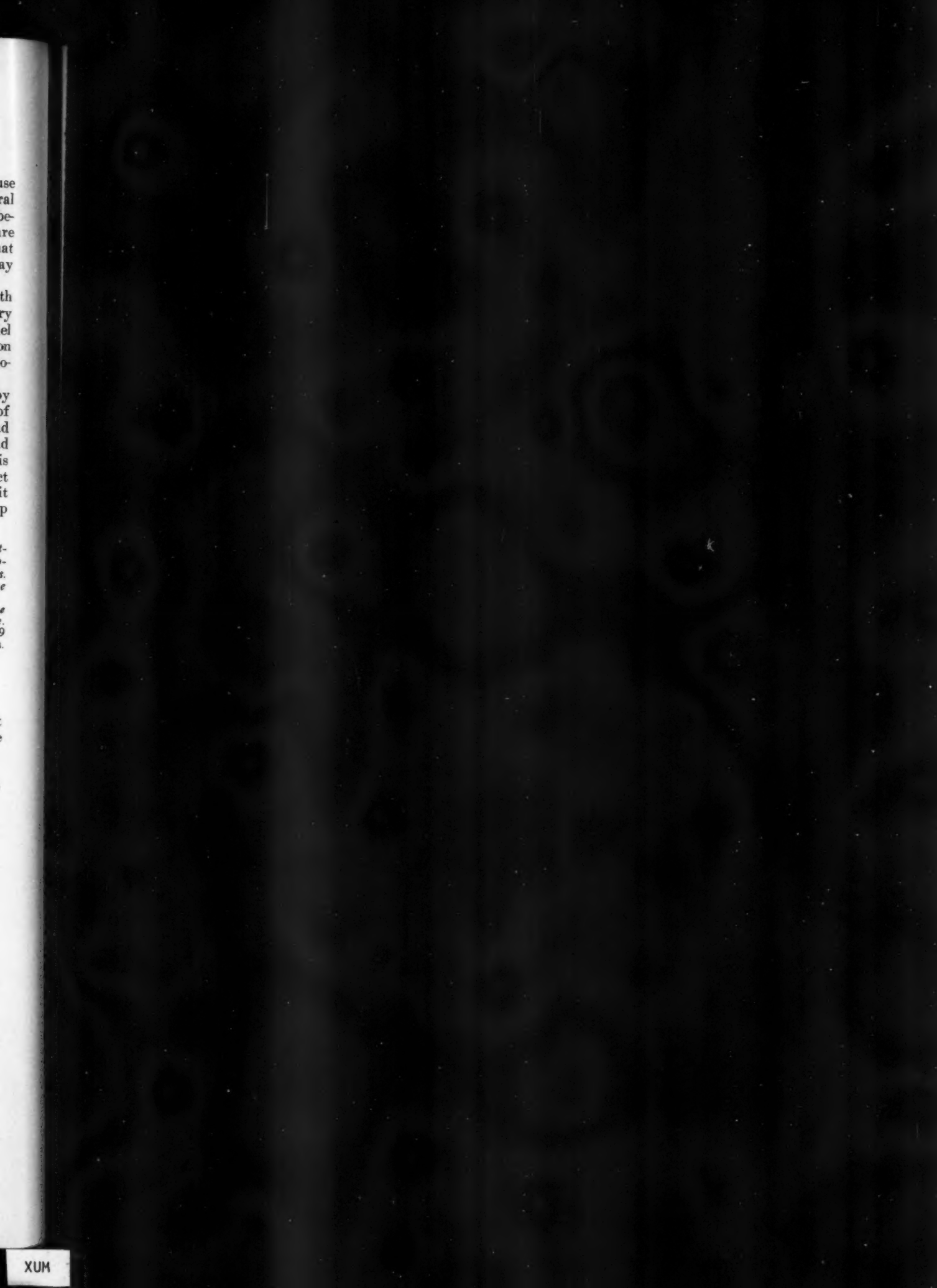
The Smaller House. Well selected examples of the latest practice in modern English domestic architecture. 9¾ x 12 *in., 192 pages. The Architectural Press, 27-29 Tothill Street, Westminster, S. W. 1, London. Price* 25s. *net.*

EARLY CONNECTICUT ARCHITECTURE

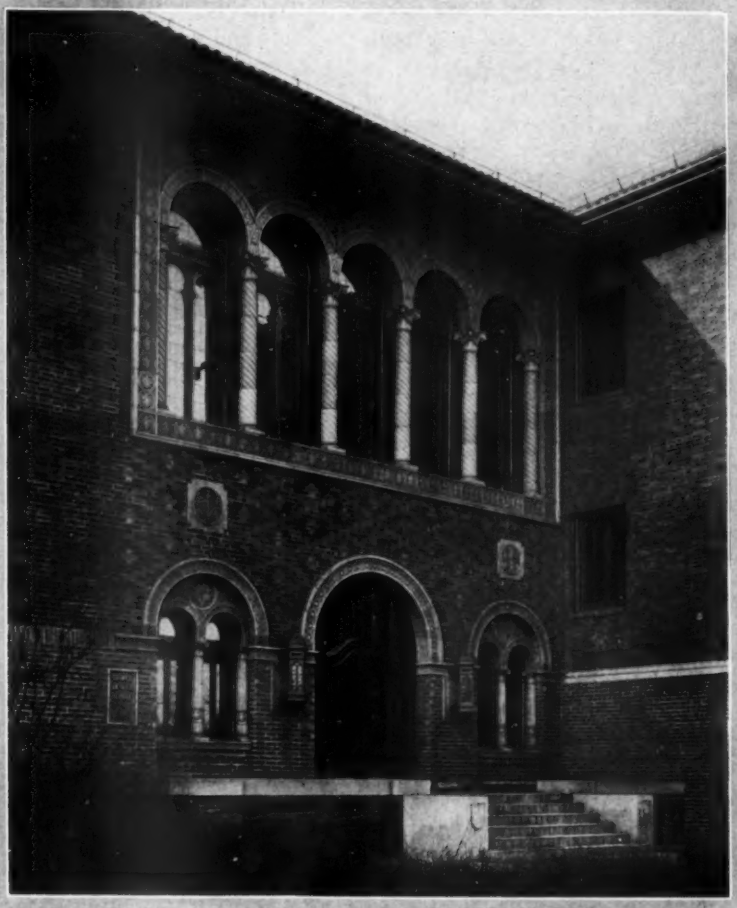
ALTHOUGH there is a considerable amount of data about Colonial architecture in the form of measured drawings that is available, Mr. Kelly has illustrated work heretofore unpublished. While the scope of the selections is confined to Connecticut, they are so distributed throughout the state that they cannot be considered as local. Although Connecticut's early architecture is in many ways similar to that of the other American colonies, it has certain characteristics of simplicity that give it a refreshing quality in comparison with much work elsewhere that is over-wrought and over-sophisticated in design. It takes us back to the origin of architectural design in America.

The twenty-five plates are each 15″ x 21″ in size and each includes an elevation drawn to scale, a photograph, scale details and full size outlines of the mouldings and sections. The illustrations are of a high standard of draftsmanship, engraving and printing. This portfolio is a desirable and usable addition to the architect's library.

Early Connecticut Architecture, by J. Frederick Kelly, A.I.A. Twenty-five plates 15″ x 21″ *in portfolio. William Helburn, Inc.,* 418 *Madison Avenue, New York City. Price* $10.00.



XUM



Geo. Dewey School, St. Louis, Mo.
R. M. Milligan, Architect
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Fire-Flashed Terra Cotta in varying shades from buff to golden brown, used with texture brick recalling these colors, presents a consistent use of materials achieving great richness of effect at a moderate cost. Let us assist you with data for specifying effectively.

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COMPETITION FOR TWO SCHOLARSHIPS

TWO scholarships of three hundred dollars each are offered in the scholastic year 1924-25 for special students in the third or fourth year of the course in architecture at the Massachusetts Institute of Technology. They will be awarded as the result of a competition in design under the direction of the Committee on Design of the Department of Architecture.

The competition is open to citizens of the United States of good character, who are between twenty-one and twenty-eight years of age, and who have had at least two years of office experience. It will be held from May 24 to June 2. Competitors are allowed to prepare their drawings wherever conditions conform to the requirements of the Committee, but these drawings must be sent to Boston for judgment.

Applications should be received on or before April 10, addressed to Professor William Emerson, 491 Boylston Street, Boston, Mass.

STEVENSON COTTAGE TO BE ABANDONED

AS the result of disagreement between the Stevenson Society of America and owners of the Baker cottage, in which Robert Louis Stevenson, author, resided at Saranac Lake, N. Y., it has been found necessary to abandon the cottage as a literary shrine and move the Stevenson relics to the Saranac Lake Library.

Disagreement arose, it was said, over terms of occupancy, and the society may raise funds to purchase the structure, visited annually by hundreds from all parts of the world.

BUILDING TRADES IN SAN FRANCISCO

IN contrast to the unfortunate experiences of almost all the other large cities of the United States, San Francisco has gone through the entire year 1923 without a single strike of any consequence in the building trades. In fact, it may be said without any strike at all; for the only ones which occurred were of a small number of union plasterers and piledrivers—the latter lasting less than two weeks. As for the union plasterers, they were working contentedly under the American Plan until their international officers came and ordered them to strike on pain of losing their charter. Facing this situation, these men left their jobs, but after a few weeks of idleness they decided by unanimous action to disregard their international officers, and returned to work under the American Plan. With these trifling exceptions, the 20,000 union and non-union men in the building trades of San Francisco worked side by side every working day throughout the entire year without trouble or controversy of any sort. Not a jurisdictional dispute occurred, and not a single job was held up. The wage scale set by the Impartial Wage Board after extended public hearings, and enforced by the Industrial Association, guaranteed an excellent wage but prohibited entirely any pyramiding either up or down; and American Plan conditions prevailed throughout the entire building industry.

Furthermore, there was no strike in any of the other industries of the community during 1923, except that of the garment workers which lasted but a short time and ended by the workers accepting the American Plan basis of employment. San Francisco has thus had a full year of virtually unbroken industrial peace, which has been translated into concrete benefits for the whole city.

N. Y. CHAPTER OPPOSES CENTRAL PARK INVASION

A LUNCHEON meeting of the New York Chapter of The American Institute of Architects was held in the Fine Arts Building on West Fifty-seventh Street on March 19. The purpose of this meeting was to discuss the two propositions now before the public with reference to a Soldiers Memorial and also a Fine Arts Building, both to be erected in Central Park. Thomas Hastings, whose design for the Soldiers Memorial was illustrated in a recent issue of this journal, explained the project very fully. After discussion it was resolved that the New York Chapter was opposed to the erection of any memorial in Central Park, or any encroachment on the park area. This sentiment was continued into the discussion as to the proposed Fine Arts Building and a similar motion opposing that scheme received a majority vote.

EARTHQUAKEPROOF HOUSE

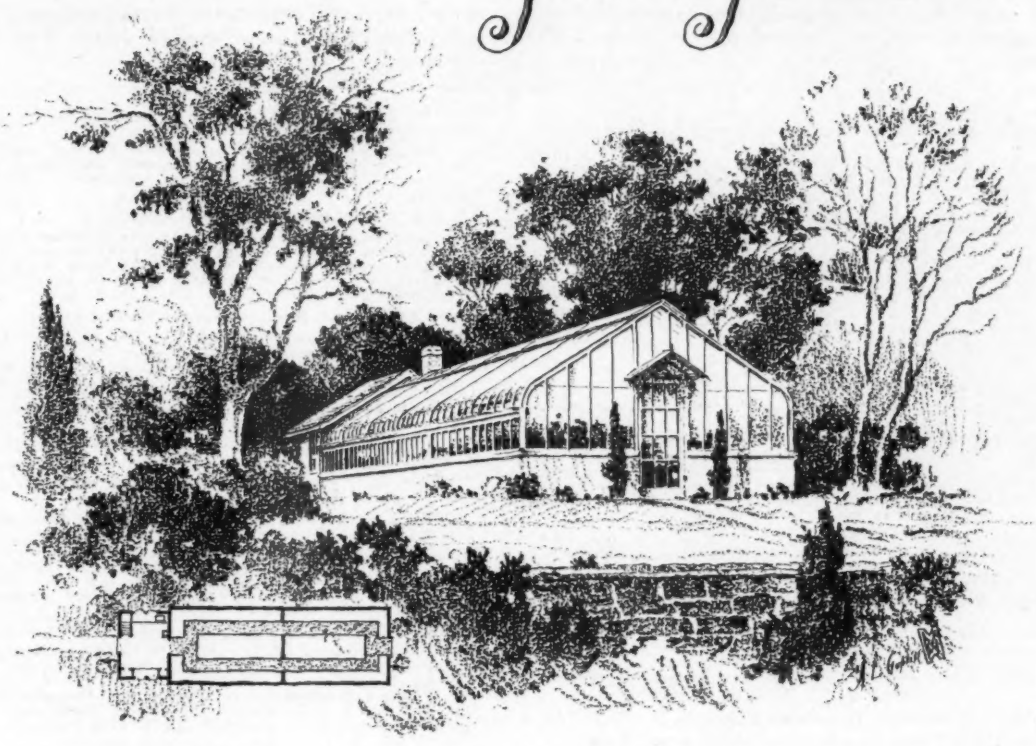
IT is reported that a special type of building to resist earthquake shocks is being designed in San Francisco, and tests are to be made at Valparaiso, Chile. According to Professor Bailey Willis, of Stanford University, the foundations of this 'quakeproof building will consist of two broad slabs of reinforced concrete with ball bearings between, so that when the lower slab moves, the upper will remain stationary. Springs and shock absorbers will also be employed.

GOLF TOURNAMENT FOR ARCHITECTS

THE second annual F. Graham Williams Golf Tournament will be held at the East Lake Country Club at Atlanta, Ga., on May 9.

An invitation is extended to all architects and architectural draftsmen, to compete, whether they receive a direct notice or not. Rules governing the competition and other particulars may be obtained by addressing F. Graham Williams Company, Candler Building, Atlanta, Ga.

Glass Gardens



Do You Pay for A Specification Or Buy A Reputation?

THE man who buys the average high grade car these days, doesn't spend much time lifting up the hood and digging into the engine. He doesn't have to.

Cars in general have become so standardized, and makes so well established, that they can safely be accepted for exactly what they are.

The thing that is really bought, is not the car, but the something back of it, that backs it up. The maker's reputation, in other words.

By the same token, that's quite the biggest thing we have to sell to your clients. Details and specifications are, of course, understood, as an essential, but of what good are they if not backed by a reputation?

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BUFFALO Jackson Bldg.
DENVER 1247 So. Emerson St.
TORONTO Harbor Commission Bldg.
MONTREAL 124 Stanley St.

REFERENCE LIST OF BUSINESS LITERATURE

A service arranged for the use of the Architect, Specification Writer and Architectural Engineer

This list of the more important business literature of Manufacturers of building material and equipment is published each issue. Any of these publications may be had without charge, unless otherwise noted, by applying to The American Architect and The Architectural Review, 243 West 39th Street, New York, or obtained directly from the manufacturers. Either the titles or the numbers may be used in ordering.

ACOUSTICS

Johns-Manville, Inc., 294 Madison Ave., New York, N. Y.

710. *Architectural Acoustics.* A treatise on the correction of architectural acoustics in churches, schools, hospitals, office buildings and other places. 24 pp. Ill. 6 x 9 in.

AIR CONDITIONING—See also Heating and Ventilation

The Bayley Manufacturing Company, 732-760 Greenbush St., Milwaukee, Wis.

486. *Bulletin No. 23.* This bulletin is descriptive of the Bayley Turbo-Atomizer, the Bayley Turbo Air-Washer and Air Conditioner, for cleaning, cooling, tempering, humidifying and dehumidifying air. It contains an interesting treatise on air conditioning methods together with useful tables and a set of specifications. 32 pp. Ill. 7¾ x 10½ in.

AIR FILTRATION

Midwest Air Filters, Inc., 100 E. 45th St., New York City.

642. *Dust Problems and Their Solution.* A discussion of the problems of supplying clean air for ventilation and industrial purposes, covering the complete line of Midwest Air Filters. Drawings, photographs, installation sizes, specifications, tables, etc., make it a practical handbook on the subject for architects and specification writers. 48 pp. Ill. 8½ x 11 in.

ARCHITECTURAL IRON WORK—See also Ornamental Metal Work

ASBESTOS—See also Lumber, Roofing

Johns-Manville, Inc., 294 Madison Ave., New York, N. Y.

700. *Johns-Manville Service to Power Users.* A catalog containing valuable data on all forms of asbestos insulation, asbestos packings, steam traps, high temperature cements, asbestos brake blocks and linings, asbestos building materials and general technical data. 260 pp. Ill. 8½ x 11 in.

ASBESTOS ROOFING—See also Roofing

The Philip Carey Co., Lockland, Cincinnati, Ohio.

380. *Asbestos versus Fire.* Booklet in colors. Contains information about asbestos; data on Carey Prepared and Built-up Asbestos Roofing; pictures of buildings on which they have been used. 15 pp. Ill. 6 x 9 in.

ASH HOISTS—See also Hoists

Gillis & Geoghegan, 545 West Broadway, New York, N. Y.

329. *General Catalogue.* Contains specifications in two forms, (1) using manufacturer's name, and (2) without using manufacturer's name. Detail in ¼ in. scale for each telescopic model and special material handling section. Fully illustrated with photographs of actual installations and descriptive matter of same. 20 pp. 2 colors. 8½ x 11 in.

BRICK

American Face Brick Association, 1754 People's Life Bldg., Chicago, Ill.

103. *The Story of Brick.* Contains the history of, and basic requirements of building brick, artistic, sanitary and economic reasons, comparative costs, and fire safety with photographs and drawings, and illustrates ancient and modern architectural works of note in brick. Size 7 x 9¼ in. 56 pp.

137. *A Manual of Face Brick Construction.* The history of brick making, types of face brick, showing details of construction for walls, chimneys and arches. Details of use of tile and brick construction and different types of bonds are given. A series of plans and elevations of small brick houses, descriptions, useful tables and suggestions are illustrated and described. Size 8½ x 11 in. 116 pp. Price $1.00.

155. *The Home of Beauty.* A booklet containing fifty prize designs for small brick houses submitted in national competition by architects. Texts by Aymar Embury II, Architect. Size 8 x 10 in. 72 pp. Price 50 cents.

371. *Architectural Details in Brickwork. Series One, Two and Three.* Each series consists of an indexed folder case to fit standard vertical letter file, containing between 30 and 40 half-tones in brown ink on fine quality paper. These collections are inspiring aids to all designers. Sent free to architects who apply on their office stationery; to others, 50 cents for each series.

454. *Bungalow and Small House Plans.* Four booklets containing plans for attractive small brick houses, containing 3-4, 5, 6, and 7-8 rooms. 50 pp. Ill. 8½ x 11 in. 25 cents each, $1.00 for the set.

BRICK AND TILE—See also Brick

BUILDING CONSTRUCTION

Cement-Gun Company, Allentown, Pa.

503. *Report on Gunite Walls.* A report of fire tests made by Underwriters' Laboratories on Gunite walls, resulting in giving them a three-hour fire resistance classification. 20 pp. Ill. 6 x 9 in.

Concrete Engineering Co., Omaha, Neb.

347. *Handbook of Fireproof Construction.* An illustrated treatise on the design and construction of reinforced concrete floors with, and without suspended ceilings. The Meyer Steel-form Construction is emphasized and tables are given of safe loads for ribbed concrete floors. 40 pp. Ill. 8½ x 11 in.

Curtis Companies Service Bureau, Clinton, Iowa.

602. *Better Built Houses.* Vol. XIII. This volume contains floor plans and perspectives of 21 two family houses. The designs were made by Trowbridge and Ackerman, Architects, New York, and illustrations rendered by Schell Lewis. Printed in sepia on heavy cream paper. Sent free to architects, east of the Rockies, requesting it on business stationery, otherwise price $1.00. 24 pp. Ill. 9 x 12 in.

McKeown Bros. Co., 21 East 40th St., New York, N. Y.

434. *Clear Floor Space.* A folder showing uses and advantages of McKeown "Lattis" and "Bowstring" long span wood roof trusses. 4 pp. Ill. 8½ x 11 in.

Portland Cement Association, 347 Madison Ave., New York City.

595. *Concrete Floors.—Proposed Standard Specifications of the American Concrete Institute.* Specification with explanatory notes covering materials, proportions, mixing and curing. Plain and reinforced slabs are covered as well as one and two course floors and wearing courses. 18 pp. 6 x 9 in.

Truscon Steel Company, Youngstown, Ohio.

317. *Truscon Floortyle Construction. Form D-352.* Contains complete data and illustrations of Floortyle installations. 16 pp. Ill. 8½ x 11 in.

318. *Truscon Standard Buildings. Form D-398.* Describes Truscon Standard Steel Buildings, with diagrams, illustrations of installations, descriptive matter and list of users. 48 pp. Ill. 8½ x 11 in.

319. *Truscon Building Products. Form D-376.* Contains a brief description of each of the Truscon Products. 112 pp. Ill. 8½ x 11 in.

320. *Modern School Construction. Form D-396.* Contains illustrations of schools, with typical elevations, showing advantages of Truscon Products for this construction. 16 pp. Ill. 8½ x 11 in.

BUILDING DIRECTORIES

The Tablet & Ticket Co., 1015 West Adams St., Chicago, Ill.

517. *Office Building Directory.* Bulletin illustrating and describing directories made by this company providing for any required number of names. Frames of wood or metal with glass cover or doors. Name strips with one quarter inch white letters furnished. Size 7 x 10 in. 4 pp.

BUILDING HARDWARE—See Hardware

BULLETIN BOARDS

R. W. Clark Mfg. Co., 1774 Wilson Ave., Chicago, Ill.

588. *Clark Directories and Clark Changeable Bulletin Boards.* Two pamphlets describing the Clark Changeable Bulletin Board and Directories for Office Buildings, Hotels, Business Buildings, etc. 8 pp. and 4 pp. Ill. 6¼ x 9 in.

The Tablet & Ticket Co., 1015-1021 West Adams Street, Chicago, Ill.

516. *T. & T. Changeable Bulletin Display Boards.* Describes bulletin boards with changeable type which has a self-spacing device so the lettering always looks neat and regular. 24 pp. Ill. 6 x 9 in.

CABINETS

Hess Warming & Ventilating Co., 1204-7 Tacoma Building, Chicago, Ill.

386. *The Hess Sanitary Medicine Cabinet Lockers and Mirrors.* Description with details of an enamelled steel medicine cabinet for bathrooms. 20 pp. Ill. 4 x 6.

CASEMENTS—See Doors and Windows

CEDAR LINING—See Lumber

CEILINGS, METAL

The Edwards Manufacturing Company, Cincinnati, O.

193. *Pamphlet* of 32 pages describing metal ceilings and wainscoting. Well illustrated, with list prices and rules for estimating. 7 x 10 in.

CELLAR SASH—See Doors and Windows

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CEMENT

The Carney Co., Mankato, Minn.

448. *The Bond That Guarantees the Wall.* Attractive catalog for architects, engineers, contractors, and dealers. Describes fully the characteristics, durability and economy of this nature-mixed cement that requires no lime. Contains simple formula for mixing and illustrations of Carney-laid buildings. 24 pp. Ill. 8½ x 11 in.

599. A circular describing improvements in manufacturing the material, cost comparisons, physical tests and specifications for use. 4 pp. Ill. 8½ x 11 in.

711. *A Perfected Cement.* An attractive circular describing late improvements in manufacturing Carney, cost comparisons, physical tests, specifications and testimonials. List of Carney-built buildings with architect's and contractor's names. 8 pp. Ill. 8½ x 11 in.

Durastone Co., 422 East 3rd St., New York, N. Y.

418. *Durastone Brand Cement.* A description of a cement which matches any stone or marble, any color or texture. Can be cast in molds and also used for walls or plain surfaces. Illustrations are given of beautiful work executed with this material. 12 pp. 8½ x 11 in.

Louisville Cement Co., Inc., Louisville, Ky.

694. *Brixment for Perfect Mortar.* A description of the chemical and physical properties of Brixment, advantages of its use in mortars for brick and stone masonry, tests of strength and directions for use. In cover for filing. 16 pp. Ill. 8½ x 11 in.

Portland Cement Association, 111 West Washington St., Chicago, Ill.

636. *Concrete Data for Engineers and Architects.* A valuable booklet containing the reports of the Structural Materials Research Laboratories at Lewis Institute, Chicago, in abbreviated form. It is of great value to writers of specifications. 18 pp. Ill. 8½ x 11 in.

650. *Concrete Floors.* Contains the tentative specifications of the American Concrete Institute for concrete floors of all kinds, with notes on floor finishes, coverings, typical construction designs and computing data. 16 pp. Ill. 8½ x 11 in.

CHAIRS—See Furniture

The H. L. Marble Chair Co., Bedford, Ohio.

587. *Office Chairs, Catalog No. 31.* Describes a complete line of seating fixtures, for offices, directors' rooms and other places consisting of stationary and swivel chairs, settees and couches, both plain and leather upholstered. Also stenographer's chairs, stools, waste baskets, coat trees and accessories. 75 pp. Ill. 9 x 12 in.

CHUTES—See also Laundry Equipment

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

171. Booklet showing general construction and size of chutes to receive coal. Two types are built into the foundation wall with glass panel in place of cellar window; another type is placed flush with the ground, and is placed adjacent to wall, or can be placed near the street curb. Size 3½ x 6¼ in. 16 pp.

CLOCKS

Landis Engineering and Manufacturing Co., Waynesboro, Penna.

469. *Landis Electric Time and Program System.* A collection of bulletins No. 100, 110, 120, 130, 150 and 160, dealing with master and secondary clocks, equipment, time stamps, etc. Bound in expansible filing cover of tough paper. 48 pp. Ill. 8½ x 11 in.

COLUMNS

Lally Column Co. of New York, 334 Calyer Street, Brooklyn, N. Y.

122. *Lally Columns. Handbook.* Detailed construction diagrams for various types of steel construction. The text describes advantages of endurance and economy of the column. Various tests, tables of sizes, dimensions, weight, carrying capacities, and data on other structural materials are given. Size 4⅝ x 6⅝ in. 81 pages.

CONCRETE, REINFORCED—See also Reinforcing Steel

CONDUITS—See Pipe

DAMPPROOFING—See also Waterproofing

DOORS AND WINDOWS

Andersen Lumber Company, Bayport, Minn., (formerly South Stillwater).

539. *Complete Catalog for Architects and Builders.* Describes Andersen Standard Window Frames and Cellar Sash Frames, which are in 7 units instead of 57 and may be assembled and nailed in 10 minutes. Shows uses in special construction for it comes in 121 sizes and styles. 24 pp. Ill. 7¾ x 10¾ in.

Crittall Casement Window Co., Detroit, Mich.

672. *Crittall Universal Casements, Catalog No. 22.* Contains complete description, photographs, specifications and details of steel casement windows for banks, schools, residences, churches hospitals, set directly into masonry and with auxiliary frames. 76 pp. Ill. 9 x 12 in.

695. *Crittall Solid Steel Reversible Windows, Catalog No. 1-24.* A catalog explaining the advantages of reversible metal windows for office buildings, schools, hospitals and other substantial buildings. Details of construction and specifications. 20 pp. Ill. 8½ x 11½ in.

Dahlstrom Metallic Door Co., Jamestown, N. Y.

674. *Architectural Catalog.* Illustrated catalog showing styles and types of Dahlstrom Standard Construction Hollow Metal Doors and Trim, Condue-Base, etc. Also various types of frames, jamb construction and architectural shapes. 178 pp. Ill. 8½ x 11 in., in loose leaf.

Henry Hope & Sons, 103 Park Ave., New York.

65. *Hope's Casements and Leaded Glass.* Portfolio. Gives specifications, description and photo-engraving, of Hope Casements in English and American Architecture, full size details of outward and inward opening and pivoted casements, of residential and office types. Size 12¼ x 18½ in. 32 pp.

The Kinnear Manufacturing Company, Columbus, Ohio.

455. *Steel Rolling and Folding Doors and Shutters. Catalog No. 52.* This catalog is devoted to service doors adaptable to buildings of all classes, piers, factories, warehouses, etc. Illustrates their use and contains tables for designers and detailers. 96 pp. Ill. 8 x 11 in.

S. H. Pomeroy Company, 282 East 134th St., New York, N. Y.

614. *Solid Metal Double Hung Window. Type "A." Bulletin A.* Complete specifications and details of sash, frame, stools and stool and apron. 4 pp. Ill. 8½ x 11 in.

Truscon Steel Co., Youngstown, Ohio.

315. *Truscon Steel Sash.* A catalog containing designing data, tables and views of Stock Sash installations. 6 pp. Ill. 8½ x 11 in.

348. *Truscon Steel Sash.* This handbook has been prepared for detailers and specification writers. The descriptions are clear and the details are complete. 80 pp. Ill. 8½ x 11 in.

638. *Daylighting Schools.* A treatise on the daylighting and window ventilation of school buildings quoting eminent authorities, illustrated with diagrams of lighting data and details of suitable windows. 28 pp. Ill. 8½ x 11 in.

The Wheeler Osgood Co., Tacoma, Wash.

FS04. *The Door is Important.* A catalog explaining the importance of properly constructed doors and describing the manufacture and details of construction of the Douglas Fir Laminex and Woco Doors. 24 pp. Ill. 6 x 9 in.

713. *Laminex Doors, Catalog No. 31.* Doors made of Douglas Fir employing a special laminated and doweled construction. Twenty designs in vertical and flat grain veneers. Sizes and details. 44 pp. Ill. 3⅞ x 9¼ in.

714. *Laminex Doors. A Book for Architects and the Building Trade.* This book fully describes the special features of Douglas Fir Laminex and Woco Doors; strength, water and heat tests; properties of Fir; Woco garage doors and window sash. 24 pp. Ill. 8 x 11 in.

The J. G. Wilson Corporation, 2 East 36th St., New York City.

656. *Wilson Rolling Partitions and Hygienic Wardrobes.* Catalog "P." Complete catalog of vertical and horizontal wooden rolling partitions and ventilated wardrobes with disappearing doors. 32 pp. Ill. 6 x 9 in.

Van Zile Ventilating Corporation, 280 Madison Ave., New York City.

697. *The Ventadoor.* A catalog describing a metal ventilating panel installed in wood and metal doors, always sight-proof and can be closed sound-proof and serves the purposes of a transom. 14 pp. Ill. 3½ x 6 in.

DRAFTING MATERIALS

American Lead Pencil Co., 220 Fifth Ave., New York, N. Y.

268. *Booklet C-20. Venus Pencil in Mechanical Drafting.* An interesting illustrated booklet showing the possibilities of the Venus Drawing Pencil for drafting. 6 x 9 in.

Joseph Dixon Crucible Company, Pencil Department, Jersey City, N. J.

325. *Finding Your Pencil.* A book explaining the various degrees of hardness of the Eldorado pencil and the grade most suitable for every man who uses a pencil be he business or professional man, clerk or draftsman. Accompanied by a color chart of Dixon colored crayons. 16 pp. and 4 pp. in color chart. Ill. in colors. 3¼ x 6 in.

DRAINS—See also Plumbing Equipment

The Josam Manufacturing Co., 2d and Canal Sts., Michigan City, Indiana.

630. *Josam Floor, Shower and Roof Drains. Catalog F.* A loose leaf catalog illustrating complete line of adjustable drainage devices for floors, shower baths, roofs, swimming pools, railroad and deck drains, special use drains, strainers and accessories. Details and dimensions. 55 pp. Ill. 8½ x 11 in.

631. *Josam Plate Numbers.* A loose leaf portfolio containing blue print details with dimension schedules of drainage fixtures for floors, showers, roofs, decks and special uses. 25 pp. Ill. 8½ x 11 in.

DUMB-WAITERS—See also Elevators

Kaestner & Hecht Co., 1500 No. Branch St., Chicago, Ill.

598. *Electric Dumb-waiters. Bulletin No. 520.* Illustrated catalog, 8 pp. 8½ x 11 in.

Sedgwick Machine Works, 144 West 15th Street, New York.

60. *Hand Power Elevators and Dumb-waiters in Modern Architectural Construction.* Illustrated catalogue. 4¼ x 8¼ in. 80 pp.

CARNEY
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Comes Five Sacks, 4.75 Cubic Feet, To Every Barrel

Carney Has These Exclusive Merits:

IT can be used directly after mixing or left in the box over night. There is no waste to Carney. It lays the maximum number of brick to the barrel. Each barrel contains five sacks (cloth or paper) or 4.75 cubic feet. Four parts sand carrying capacity—nineteen cubic feet of smooth mortar to a barrel of cement. Requires no lime, protecting against adulteration or errors through carelessness. Being more plastic and smoother working, the mason can work faster and easier. No soaking required. Ideal for wall-bearing buildings. It becomes harder than the brick and tile it joins and continues to harden indefinitely. It works perfectly in cold weather. Sets a creamy white, contrasting beautifully with brick or tile. Clients are always satisfied with Carney laid walls. Contractors bid lower because the labor cost of mixing and bricklaying is reduced and they do better work with Carney. Carney always builds a permanent, substantial structure. The final cost of a Carney wall is always lower.

Carney is the perfected cement for brick and tile mortar.

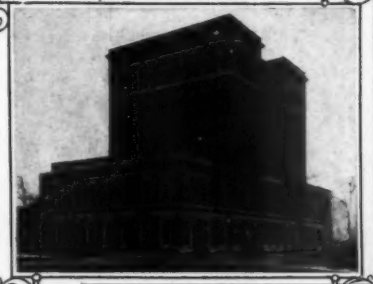
Wahkonsa Annex, Fort Dodge, Iowa.
Architect, L. O. Damon
Contractor W. J. Zitterell Co

Park Boulevard Building, Detroit, Mich.
Architect, Albert Kahn
Contractor, Bryant & Detwiler

Catholic Orphanage, Alton, Ill.
Architects, Wenabecker & Hillebrand
Contractor, Wimmer Contracting Co

Wrigley Building, North Section, Chicago, Ill.
Architects, Graham, Anderson, Probst & White
Contractor, Lanquist & Illsley Co.

Lincoln School, Mankato, Minn.
Architect, Geo. Pass, Jr.
Contractor, Eric Carlstrom



Buffalo Athletic Club, Buffalo, N. Y.
Architects, Edw. B. Green & Sons, Inc.
Contractor, John W. Cowper Co.

Studebaker Corporation Bldgs., South Bend, Ind.
Architect, Albert Kahn
Contractor, H. G. Christman Co.

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Cement Makers Since 1883

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Mills: Mankato, Minn., Carney, Minn.

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Leader-News Building, Cleveland; Chamber of Commerce Building, Chicago; Omaha National Bank Building, Omaha; Syndicate Trust Building, St. Louis; Book Building, Detroit; Builders' Exchange, Minneapolis.

Specifications: 1 part Carney to 4 parts sand.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

ELECTRICAL EQUIPMENT—See also Lighting

Frank Adam Electric Co., St. Louis, Mo.

206. *Catalog No. 25.* A catalog and price list of knife switches switchboards, panel boards, steel cabinets, switchboard material. 83 pp. Ill. 3 x 10½ in.

Benjamin Electric Mfg. Co., Chicago, Ill.

671. *Benjamin Industrial Lighting Equipment. Bulletin No. 52.* Contains lighting data and general information, complete catalog of reflectors, interchangeable devices, vapor proof units, indoor and outdoor equipment, store and office fixtures, show case lighting, fittings and accessories. 80 pp. Ill. 8 x 10½ in.

Gishalt Machine Company, Madison, Wis.

F807. *Gishalt Direct-Current Transformer.* A circular describing a transformer for reducing a high voltage direct current to any desired low voltage in place of batteries, motor generators, etc. 8 pp. Ill. 3¾ x 8½ in.

The Hart & Hegeman Mfg. Co., 342 Capitol Ave., Hartford, Conn

699. *H. & H. Electrical Wiring Devices, Catalog "R."* Catalog of a complete line of switches, sockets, plugs, receptacles, plates, rosettes, cut-outs, elexits and accessories. Two identical catalogs in two sizes. 152 pp. Ill. 5 x 6¼ and 8 x 10½ in.

700. *Gold and Silver Star Switches.* A new type of switch with composition base having a gold star or a silver luminous star in on the button. 4 pp. Ill. 3½ x 6 in.

Harvey Hubbell, Inc., Bridgeport, Conn.

297. *Electrical Specialties. Catalog No. 17, 1921.* This catalog contains descriptions with prices of the thousand and one items connected with electric light, electric alarm and small electric appliance installations in modern buildings. 104 pp. Ill. 8 x 10½ in.

Minneapolis Heat Regulator Co., Minneapolis, Minn.

570. *The Minneapolis Thermostatic Relay Switch.* Used in connection with any Minneapolis Thermostat, provides a means of temperature control for automatic oil burners, electric refrigerating apparatus, electric heating units and any similar equipment where it is necessary to operate an electric switch in accordance with temperature changes. 4 pp. Ill. 8½ x 11 in.

National Metal Molding Co., Pittsburgh, Pa.

481. *Liberty Rubber Insulated Wires, Cables and Cords.* A descriptive catalog of insulated wires, cables and cords for electric wiring. Contains much special information together with useful tables. 20 pp. Ill. 6 x 9 in.

ELEVATORS—See also Dumb-waiters and Hoists

A. B. See Electric Elevator Co., 52 Vesey St., New York.

169. Photographs and description in detail of elevator equipment manufactured by the A. B. See Electric Elevator Co. Size 6 x 8 in.

Kaestner & Hecht Co., 1500 No. Branch St., Chicago, Ill.

597. *Electric Traction Elevators, Bulletin No. 500.* Illustrated catalog describing gearless traction elevators and worm-geared traction elevators. 31 pp. 8¼ x 11 in.

Kimball Brothers Company, Council Bluffs, Iowa.

330. *Kimball Elevators.* An illustrated catalog of hand power, sidewalk, and garage elevators and dumb-waiters and electric passenger, freight and push button elevators. 32 pp. Ill. 7⅝ x 10½ in.

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

651. *Otis Geared and Gearless Traction Elevators.* Leaflets describing all types of geared and gearless traction elevators with details of machines, motors and controllers for these types. Illustrated. 8½ x 11 in.

Richards-Wilcox Mfg. Co., Aurora, Ill.

335. *"Ideal" Elevator Door Equipment.* Catalog showing elevator door hangers for one, two and three speed doors, also doors in pairs and combination swing and slide doors. Door closers and checks. 24 pp. Ill. 8½ x 11 in.

ELEVATOR LOCKS

Elevator Locks Co., 119 No. Washington St., Peoria, Ill.

536. *M-C-K Safety Elevator Locks.* A description of locks for elevators which mechanically lock the power and gate automatically, while gate is open; keep power locked until gate is securely closed; securely lock gate before power can operate; control the landing. Contains several pages of names of contented users. 24 pp. Ill. 4 x 9¼ in.

ESCALATORS

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

652. *Elevators and Inclined Elevators.* A comprehensive catalog illustrating the use of escalators for transporting people in stores, subways, railroad stations, theatres and mills; also inclined freight elevators for stores, factories, warehouses and docks adjustable to tide levels. 22 pp. Ill. 8½ in.

FENCE

The Stewart Iron Works Company, Cincinnati, Ohio.

456. *Book of designs "B."* A book of fence designs full of suggestions for architects. All illustrations are from photographs. 80 pp. Ill. 9½ x 12 in.

FILTERS—See Air Filters

FINANCING OF ENTERPRISES

S. W. Straus & Co., 565 Fifth Ave., New York, N. Y.

183R. *Forty Years Without Loss to Any Investor.* A book describing the Straus Plan of investments. This firm underwrites and sells only first mortgage serial bonds secured by newly improved income producing properties, or high grade industrial properties. 37 pp. Ill. 5 x 8 in.

FIRE DOORS AND SHUTTERS—See Doors and Windows

FIREPLACES AND MANTELS

Colonial Fireplace Co., 4619 Roosevelt Road, Chicago, Ill.

675. *Everything for the Fireplace.* A catalog showing a complete line of well designed andirons in various finishes; portable, club and basket grates; wood holders, firesets and Franklin stoves; folding screens, spark guards and fenders; hoods and set grates; gas logs, electric fires, ash traps, cranes and kettles and head throats and dampers. 24 pp. Ill. 8½ x 11 in.

H. W. Covert Co., 137 East 46th St., New York.

79. *Hints on Fireplace Construction.* Diagrams of construction and installation of Covert "Improved" and "Old Style" dampers and smoke-chambers, and other fireplace accessories. Size 5⅝ x 8½ in. 12 pp.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

92. *Dampers, Chutes, Doors and Dumps.* Illustrated catalog. Equipment and appurtenances of various types, construction and installation, data, dimensions and prices.

Peerless Manufacturing Company, Inc., Louisville, Ky.

513. *The Lure of the Fireplace.* This booklet contains information and diagrams for the design and building of fireplaces, together with descriptions of modern domes and dampers so that a fireplace will work effectively at all times. Contains many illustrations of tasteful mantel designs. 24 pp. Ill. 5 x 7 in.

FLOOR COVERING—See Flooring

FLOORING, SUB—See also Stucco Base

FLOORING

Armstrong Cork Co., Linoleum Department, Lancaster, Pa.

222. *Business Floors.* A handy reference on floors for public and semi-public buildings, containing specimen specifications, directions for laying and other helpful data. Illustrated in color. 6 x 9 in.

223. *Armstrong's Linoleum Floors.* A handbook for architects, published in the file form (8½ x 11 in.) recommended by the American Institute of Architects. A technical treatise on Linoleum containing general information, tables of grades, gauges and weights, specimen specifications, and detailed directions for laying linoleum. Profusely illustrated in colors.

The Barber Asphalt Co., Philadelphia, Pa.

659. *Genasco Trinidad Lake Asphalt Mastic.* A book describing its manufacture, uses and methods of application, including application over old floors. Separate specifications for flooring, waterproofing and roofing uses. 34 pp. Ill. 6 x 9 in.

Bonded Floors Co., Inc., 1421 Chestnut St., Philadelphia, Pa.

710. *Distinctive Floors.* A publication describing Gold-Seal Rubber Tile, its composition, manufacturing and method of installation. Illustrations in full color of twelve different finishes. 8 pp. Ill. 7¾ x 10¾ in.

717. *Hospital Floors.* Descriptions and advantages of using Gold-Seal Battleship Linoleum, Gold-Seal Treadlite Tile and Gold-Seal Rubber Tile in hospital construction, insuring durable, noiseless, sanitary and attractive floors. Illustrated part in color. 8 pp. Ill. 8 x 10¾ in.

718. *Gold-Seal Treadlite Tile.* This tile, a scientific compound of cork, various gums and pigments, is described and illustrated in colors. Detail drawings and specifications for installation are included. 32 pp. Ill. 7¾ x 10¾ in.

The Long-Bell Lumber Co., R. A. Long Building, Kansas City, Mo.

204. *The Perfect Floor.* Tells how to lay finish and care for Oak Flooring. 16 pp. 14 illus. 5⅛ x 7⅝ in.

The Marbleloid Co., 461 Eighth Ave., New York.

61. *The Universal Flooring for Modern Buildings.* Illustrated booklet. Describes uses and contains specifications for Marbleloid flooring, base, wainscoting, etc. Size 6¾ x 9¾ in. 32 pp.

523. *Marbleloid for Schools.* A bulletin showing schools in which Marbleloid flooring is used. It is a composition flooring applied in a plastic state. Other bulletins show where it has been used in various classes of buildings. 4 pp. Ill. 8½ x 11 in.

Franklyn R. Muller Co., Waukegan, Ill.

242. *Asbestone Flooring Composition.* A book describing uses of and giving specifications and directions for Composition Flooring. Base. Wainscoting, etc. 8½ x 11 in. Ill.

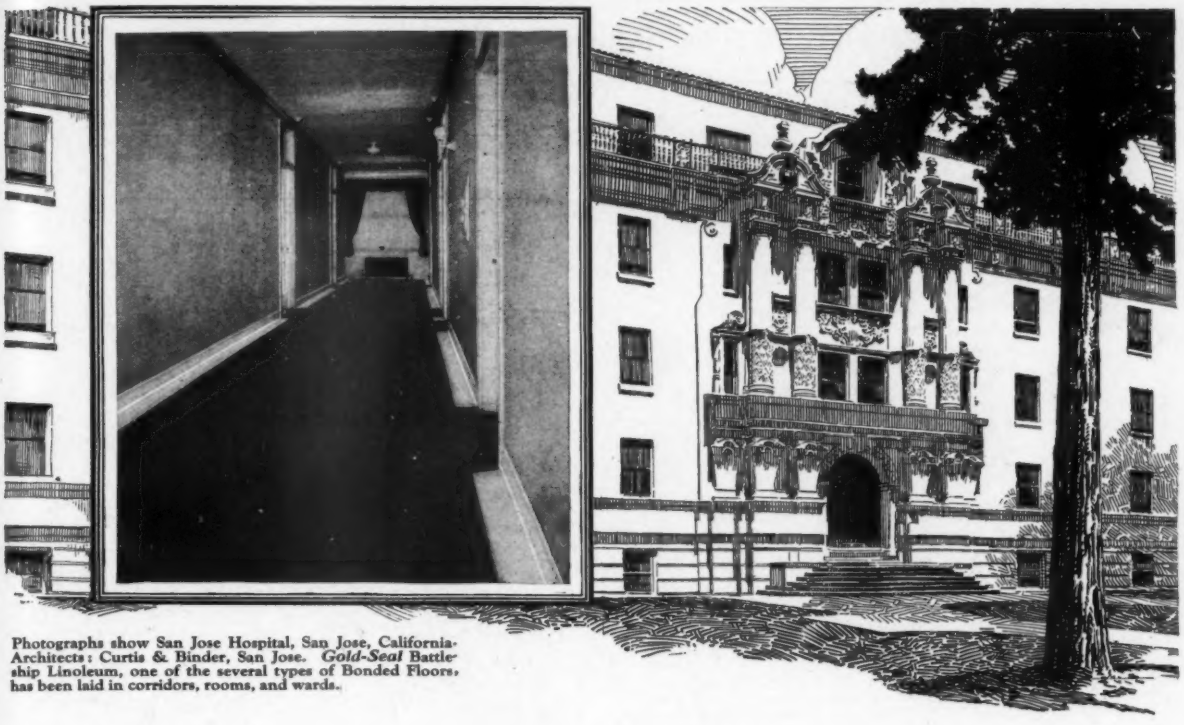
Oak Flooring Bureau, 1014 Ashland Block, Chicago, Ill.

493. *Modern Oak Floors.* A book that tells the complete story of Oak Flooring 24 pp. Ill. 6⅛ x 9¼ in.

The Rodd Co., Century Bldg., Pittsburgh, Pa.

688. *Redwood Block Floor Booklet.* A treatise on the advantages of Redwood Block Floors in factories, warehouses, hotels, office buildings, department stores, hospitals, etc. Details, dimensions and specifications for installing. 14 pp. Ill. 4 x 9 in.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual



Photographs show San Jose Hospital, San Jose, California. Architects: Curtis & Binder, San Jose. *Gold-Seal* Battleship Linoleum, one of the several types of Bonded Floors, has been laid in corridors, rooms, and wards.

The Modern Hospital and Its Floors

A modern hospital throughout is San Jose Hospital, San Jose, California. It is logical, therefore, that the resilient floors of the Bonded Floors Company were the choice for corridors, wards and private rooms.

In selecting Bonded Floors, architects secure not only the highest type of materials, but also the complete flooring service of Bonded Floors Company, an organization of flooring engineers whose wide experience has given them a vast fund of dependable information on the subject of floors.

Moreover, as Bonded Floors Company installs practically all types of resilient floors, impartial advice is assured in the matter of selection. Bonded Floors are available in such a wide variety of colors and designs as to make it possible to select floors that will harmonize with any plan of interior decoration or finishing.

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Every floor laid according to Bonded Floors specifications is backed by a Surety Bond issued by the U. S. Fidelity and Guaranty Company. The bond insures freedom from repair expense due to defects in materials or workmanship.

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(Distributors in other principal cities)

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

REFERENCE LIST OF BUSINESS LITERATURE—Continued

FLOORING

Stedman Products Co., South Braintree, Mass.

585. *Stedman Naturized Reinforced Flooring.* A circular describing a product formulated from rubber reinforced with cotton fibre, made in various colors and used for floors, wainscoting, sanitary base, stair treads, interior decorative units, wall coverings, table and desk tops and drain mats. 6 pp. Ill. 8½ x 11 in.

FLOORS—See Building Construction

FRAMES—See Doors and Windows

FURNACES—See Heating

FURNITURE—See Chairs

FURNISHINGS—See Equipment

Albert Pick & Co., 208 West Randolph St., Chicago, Ill.

F805. *Furnishings, Equipment and Supplies for Public Service, Catalog No. E-26.* A complete catalog of every kind of movable furnishings and equipment used in hotels, clubs and other residential buildings. 320 pp. Ill. 8¼ x 11 in.

GARAGE CONSTRUCTION—See also Building Construction

GARAGE INCLINES AND RAMPS

American Abrasive Metals Co., 50 Church St., N. Y. C.

677. *Feralun Anti-Slip Treads for Garage Inclines and Ramps. F179.* A folder explaining the advantages of and illustrating the actual use of Feralun Anti-Slip Treads on ramps and inclines in public garages. 2 pp. Ill. 8½ x 11 in.

GARBAGE DESTROYERS

Kerner Incinerator Company, 1029 Chestnut St., Milwaukee, Wis.

384. *The Sanitary Elimination of Household Waste, M-3 Folder.* Description of construction, installation and operation of the Kernerator for residences. Illustrated by views of residences in which the Kernerator is installed, with cuts showing all details. 15 pp. Ill. 4 x 9 in.

GARBAGE RECEIVERS

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

170. Booklet showing general construction and sizes of garbage receivers to be placed underground for suburban use; also types to be built into the wall of city homes and apartments; also types for suburban wall with opening on inside for the maid and outside for the garbage man. Size 3½ x 6¼ in. 16 pp.

GARDENS

Julius Roehrs Company, Rutherford, N. J.

400. The Ten-Ten books issued three times a year—covering nursery stock in general, such things as fruit trees, roses and perennials. Also one general greenhouse catalog, listing orchids and greenhouse plants.

GLASS

Plate Glass Manufacturers of America, First National Bank Bldg., Pittsburgh, Pa.

484. *The Part that Plate Glass Plays in the Life of Every Man.* An illustrated folder describing the many uses of plate glass. Ask also for special circular for work in hand. 6 pp. Ill. in color. 3½ x 6¼ in.

GRANITE—See Stone

GUNITE

Cement Gun Company, Allentown, Pa.

504. *The Cement Gun, Its Application and Uses.* Reprint of a paper by Byran C. Collier, M. Am. Soc. C. E. A description of what the cement gun is and how it works, together with reports on tests. 21 pp. Ill. 6x9 in. Ask also for companion pamphlet "Gunite Slabs" containing working tablets for designers and reports on slab tests. 30 pp. Ill. 6 x 9 in.

GUTTERS AND DOWNSPOUTS—See also Roofing

The New Jersey Zinc Co., 160 Front Street, New York, N. Y.

226. *Zinc Spouting.* Describes leaders, gutters, etc. "Made from Horse Head Zinc," giving information concerning their economy and durability. 8 pp. Ill. 6 x 9 in.

HARDWARE

Allith-Prouty Co., Danville, Illinois.

596. *General Catalog No. 90.* This catalog embraces a description of a complete line of door hangers and tracks, garage door hardware, spring hinges, rolling ladders, fire door hardware, overhead carriers, light hardware and hardware specialties. 144 pp. Ill. 7¾ x 10½ in.

P. & F. Corbin, New Britain, Conn.

540. *Automatic Exit Fixtures.* A catalog of fixtures that provide a ready exit at all times, as a child can operate them with ease. Doors to which they are applied can always be opened from the inside, even when locked against entrance. 4 pp. Ill. 8¾ x 11¾ in.

Monarch Metal Products Co., 5060 Penrose St., St. Louis, Mo.

438. *Monarch Casement Hardware.* A book describing hardware for casement windows. This Manual and folder comply with all suggestions made by the Structural Service Committee of the A. I. A. 18 pp. Ill. 7½ x 10½ in., in heavy folder for vertical file properly indexed.

Richards-Wilcox Mfg. Co., Aurora, Ill.

336. *Modern Hardware for Your Home.* Catalog of hangers for vanishing French doors; "Air-Way" multifold hardware for sun parlors and sleeping porches; "Slidtite" garage door hardware. 24 pp. Ill. 8½ x 11 in.

435. *Distinctive Garage Door Hardware. Catalog No. A-22.* This is more than a catalog. It is a treatise for architects and builders on the door equipment of garages, covering sliding, folding and combination sliding and folding doors, with their hardware. 94 pp. Ill. 8½ x 11 in.

436. *Sliding Door Hardware. Catalog No. A-17.* A catalog of sliding door hardware of Parallel, Accordion and Flush Door partitions. 32 pp. Ill. 7 x 10 in.

632. *Distinctive Garage Door Hardware. Catalog A No. 20.* A complete treatise on garage doors of every kind both hand and mechanically operated with description of standard and special hardware and accessories. 66 pp. Ill. 8½ x 11 in.

Russell & Erwin Mfg. Co., New Britain, Conn.

609. *Russwin Period Hardware.* A brochure illustrating hardware trim in twelve architectural styles or periods. 71 pp. Ill. 5 x 8 in.

610. *Catalog of Hardware, Volume Fourteen.* A complete catalog of building hardware, trim, locks, butts and accessories. 359 pp. Ill. 8 x 11 in.

Sargent & Company, New Haven, Conn.

560. *Sargent Locks and Hardware for Architects.* The latest complete catalog of locks and hardware. 762 pp. Ill. 9 x 12 in.

The Stanley Works, New Britain, Conn.

11. *Wrought Hardware. New 1931 Catalog.* This new catalog describes additions to the Stanley line of Wrought Hardware, as well as the older well known specialties and various styles of butts, hinges, bolts, etc. 376 pp. Ill. 6½ x 9½ in.

12. *Garage Hardware. Booklet, illustrated.* Garages and their equipment, such as hinges, hasps, door holders, latch sets, chain and hand bolts, showing illustrations and text with dimensions of garages, describing the Stanley Works product. Size 6 x 9 in. 24 pp.

13. *Eight Garages and Their Stanley Hardware.* Booklet Plans, drawings and complete hardware specifications. Size 5 x 7 in. 32 pp.

127. *The Stanley Works Ball Bearing Butts.* Booklet, illustrated. Description with full size illustrations of many typed butts and their parts, dimensions and finish. Size 5 x 7½ in. 32 pp.

495. *Stanley Detail Manual.* A catalog in loose leaf binder, consisting of five sections on Butts, Bolts, Blind and Shutter Hardware, Stanley Garage Hardware, Screen and Sash Hardware. Detail drawings are given, showing clearances and other data needed by detailers. 116 pp. Ill. 7½ x 10½ in.

Vonnegut Hardware Co., Indianapolis, Ind.

309. *Von Duprin Self-Releasing Fire Exit Devices.* A catalog and educational work on panic-proof, burglar-proof self releasing exit devices for doors and windows of buildings of any kind of occupancy. 41 pp. Ill. 8 x 11 in.

310. *Prince Self-releasing Fire Exit Devices. Supplement to Von Duprin Catalog No. 12.* Contains valuable information for architects on the selection, detailing, etc., of Prince devices for doors and windows to insure safety against fire panic. 32 pp. Ill. 8 x 11 in.

HEATERS—See Water Heaters

HEATING

American Radiator Company, 104-108 W. 42nd St., New York, N. Y.

427. *Ideal-Arcola Heating Outfits.* A book describing a system of hot water heating for small and medium size houses. The boiler is placed in a room and resembles a stove. No cellar required. The ash carrying reduced to a minimum. 24 pp. Ill. 6 x 8½ in.

Crane Company, 836 So. Michigan Ave., Chicago, Ill.

241. *Steam Catalogue.* A book containing full descriptions of the complete line of Crane valves, fittings, etc. 800 pp. Ill. 6 x 9 in.

The Duriron Co., Inc., Dayton, Ohio.

720. *Acid Fume Exhaust Fans.* A specification for exhaust fans where corrosive fumes or vapors are to be removed from chemical hoods, laboratories, etc. 4 pp. Ill. 8½ x 11 in.

The Farquhar Furnace Company, Wilmington, Ohio.

355. *Healthful Helpful Hints.* A discussion of furnace and chimney design and capacity for hot air heating and ventilation 16 pp. Ill. 4¾ x 9¼ in.

356. *A Plain Presentation to Dealers.* A book of selling talk for dealers in Farquhar Furnaces. Four model heating layouts are shown and there is a page of useful "Do and Don't" advice. 24 pp. Ill. 8½ x 11 in.

General Boilers Company, Waukegan, Ill.

444. *Catalog No. 7.* A catalog completely describing the construction and operation of Pacific Steel Boilers. Contains also specifications and price lists. 32 pp. Ill. 6 x 9 in.

The Hart & Cooley Co., New Britain, Conn.

703. *H & C Wrought Steel Grilles.* A new type of ventilating grille permitting passage of air but not sight, also plain square mesh grilles, made of steel, bronze and brass. Details and specifications. 4 pp. Ill. 8½ x 11 in.

712. *Wrought Steel Registers and Grilles, Catalog No. 24.* A catalog of wrought steel floor, baseboard and wall registers, cold air intakes, lock registers, ventilators, furnace regulators and accessories. Dimensions, details and price lists. 80 pp Ill. 7¾ x 10 in.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

XUM

SARGENT HARDWARE

PARK-LEXINGTON BUILDING
New York

Warren & Wetmore
Architects

In large office buildings devoted to commercial and professional interests, where the utilitarian requirements receive first consideration,

SARGENT

LOCKS AND HARDWARE

are providing protection when the office is closed and convenience of access and intercommunication during the business hours. The Sargent system of master-keying, an important feature from the operative standpoint, may be adapted to the requirements of each particular building or group of buildings.

SARGENT & COMPANY

NEW HAVEN, CONN.

New York, 94 Centre St. Chicago, 221 W. Randolph St.

"Details to which Standard Hardware can be applied" are printed in our catalogue. We have additional copies of these pages, bound with a cover, that we shall be pleased to send to Architects and Architectural Draftsmen upon request.

REFERENCE LIST OF BUSINESS LITERATURE – Continued

HEATING

Hess Warming & Ventilating Co., 1209 Tacoma Bldg., Chicago, Ill.

178. *Modern Furnace Heating.* An illustrated book on the Hess Welded Steel Furnaces. Pipe and Pipeless, notes for installation, sectional views, showing parts and operation, dimensions, register designs, pipes and fittings. Size 6 x 9½ in. 48 pp.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.

501. *Illinois Heating Systems. Vapor Details Bulletin 20.* This bulletin contains typical plans and elevations of heating systems, with description of details and "Standards for Computing Radiation and Boiler Sizes" of the Chicago Master Steam Fitters' Association. 18 pp. Ill. 8 x 10¾ in.

502. *Illinois Bulletins.* No. 102 contains detailed description with capacities and dimensions of Eclipse Pressure Reducing Valves. 20 pp. Ill. Nos. 202, 302, 452, 502 and 703 describe, with illustrations, Steam Specialties, Back Pressure Valves, Stop and Check Valves, Exhaust Heads, Balanced Valves, Separators, Steam Traps.

Jenkins Bros., 30 White St., New York, N. Y.

235. *Catalog No. 12.* This catalog contains descriptions of all the valves, packing, etc., manufactured by Jenkins Bros. Includes also dimensions and price lists of valves and parts. 271 pp. Ill. 4 x 6¾ in. Stiff paper cover.

237. *The Valve Behind a Good Heating System.* This booklet describes Jenkins Radiator Valves, Automatic Air Valves and other valves used in connection with steam and hot water heating. 16 pp. 4½ x 7¾ in. Stiff paper cover.

Johnson Service Company, 149 Michigan St., Milwaukee, Wis.

391. *The Regulation of Temperature and Humidity.* A description of the Johnson System of temperature regulation and humidity control for buildings; showing many kinds of thermostatic appliances for automatically maintaining uniform temperatures. 63 pp. Ill. 8½ x 11 in.

392. *Johnson Electric Thermostat, Valves and Controllers.* A catalog of devices mentioned in the title. 24 pp. Ill. 3½ x 6 in.

Kewanee Boiler Co., Kewanee, Illinois.

574. *Fire Box Boilers, Catalog No. 76.* A description of smokeless steel firebox boilers with complete data of capacities and dimensions of the brick set and portable types. 35 pp. Ill. 6 x 9 in.

575. *Power Boilers, Catalog No. 73.* A complete description of brick set horizontal tubular power boilers with full and half-front setting. Also smokeless tubular boilers with down draft furnace and steel casing. Also steel portable locomotive boilers, grates, breechings, cast iron fronts, air receivers, storage tanks and accessories. 35 pp. Ill. 6 x 9 in.

Minneapolis Heat Regulator Co., Minneapolis, Minn.

660. *Minneapolis Dual Control.* This circular describes in detail the No. 65 Hydrostat and No. 70 Pressurestat and their application for the automatic heat control of hot water, steam or vapor systems. 12 pp. Ill. 3¼ x 6 in.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

722. *Powers Temperature Regulation.* A catalog explaining the principles of thermostatic control of temperature and its application to heating plants. Details of apparatus and applications, installations in important buildings and engineering data. 40 pp. Ill. 8 x 11 in.

723. *Thermostatic Water Controller, Bulletin No. 124.* Describing water temperature control apparatus adapted to shower and tub baths, lavatories and other places where predetermined water temperature is desired. Details of installation, capacities, dimensions and prices. 4 pp. Ill. 6⅜ x 9¼ in.

724. *The No. 11 Regulator, Bulletin No. 129.* Describing a self contained, accurate regulator of liquid temperature in hot water service tanks, steam cookers, pasteurizers, etc. Details, dimensions and prices. 2 pp. Ill. 6¼ x 9¼ in.

Richardson & Boynton Co., New York, N. Y., Chicago, Ill., Philadelphia, Pa., Providence, R. I., Boston, Mass.

200. *The Richardson Vapor Vacuum-Pressure Heating System.* An interesting book which presents in clear non-technical language the principles of Vapor-Vacuum-Pressure heating; the economy over ordinary steam heating, steam and hot-water systems may be altered to use this principle with views of buildings where the V-V-P system is installed. 14 pp. Ill. 8 x 11 in.

201. *Perfect Warm Air Furnaces.* No. 203. Contains a full description of various types of warm air furnaces and parts, with dimensions and necessary data. 24 pp. Ill. 8 x 10½ in.

202. *Perfect Cooking Ranges.* Description and dimensions of the complete line of the new high enamel finish Richardson Perfect ranges, with charts and information regarding combination coal and gas cooking ranges. 40 pp. Ill. 8½ x 11 in.

Tuttle & Bailey Mfg. Co., 2 West 45th St., New York, N. Y.

395. *About Radiator Enclosures.* A booklet showing how easily and effectively unsightly radiators may be concealed by enclosures which adorn a room. 15 pp. Ill. 6¾ x 9¾ in.

396. *Special Designs. Catalog 66A.* A book of designs for grilles, screens, registers and ventilators to be used in connection with heating installations. Made of bronze, brass, iron and steel. 40 pp. Ill. 6¾ x ¾ in.

Utica Heater Company, Utica, N. Y.

557. *Utica Imperial Super-Smokeless Boilers.* These boilers burn all fuels and consume soft coal without smoke. The illustrated catalog contains complete technical data with lists of illustrations. 76 pp. Ill. 8½ x 11 in. (Separate bulletins may be had featuring the following buildings: Schools, Churches, Public Buildings, Apartments, Hotels, Residences, Industrial Buildings, Office and Theatres.)

558. *Warm Air Heating.* A folder featuring warm air heating equipment including *New Idea* pipeless furnaces, Superior pipe furnaces and *Super-Smokeless* furnaces for burning soft coal.

Warren Webster & Co., Camden, N. J.

FS06. *Webster From the Air.* An attractive booklet containing airplane views of 34 American cities in which are located many of the 30,000 installations of Webster Systems of Steam Heating. 28 pp. Ill. 6 x 9 in.

HEATING AND VENTILATION

American Blower Co., Detroit, Mich.

361. *Sirocco Service.* A quarterly publication containing descriptions of heating and ventilating systems installed by the American Blower Company, together with useful data for architects and engineers. 16 pp. Ill. 8½ x 11 in.

362. *General Catalog "ABC" Products.* A book full of useful data for all men who have to deal with heating and ventilating problems. 132 pp. Ill. 8½ x 11 in.

645. Special bulletins describing in detail all of the apparatus in their general catalog. Sent on request. Ill. 8½ x 11 in.

FS03. *The Venturafin, Bulletin No. 1018.* This bulletin describes a heating unit consisting of a Ventura disc fan and a specially designed brass and copper steam coil of remarkable efficiency. 6 pp. Ill. 8½ x 11 in.

Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.

215. *Buffalo Fan System of Heating, Ventilating and Humidifying.* Catalog 700. This contains a general discussion of heating and ventilating under four heads. Part 1, Public Buildings. Part 2, Industrial Plants. Part 3, Buffalo Apparatus. Part 4, Fan Engineering.

Garden City Fan Co., McCormick Bldg., Chicago, Ill.

673. *New Sectional Catalog No. 200.* Describing the latest improved cycloidal multivane fans for heating, ventilating and drying also standard steel plate fans and pipe coil heaters. Details, capacity tables and specifications, 24 pp. Ill. 7½ x 10½ in.

The H. W. Nelson Corporation (formerly Moline Heat), Moline, Ill.

411. *Univent Ventilation. Architects' and Engineers' Edition.* A scientific treatise on ventilation for schools, offices and similar buildings; with 40 pages of engineering data on ventilation for architects and engineers. 72 pp. Also "Supplement A" on Air Conditioning. 12 pp. Ill. with half-tones, line drawings and designing charts. 8½ x 11 in.

HOISTS—See Elevators and Ash Hoists

INCINERATORS—See Garbage Destroyers

INSULATION—See also Stucco Base

Samuel Cabot, Inc., 141 Milk St., Boston, Mass.

639. *Heat Insulation.* A treatise on the methods of securing insulation for various kinds of buildings and conditions by using different insulating quilts. 25 pp. Ill. 7½ x 10⅝ in.

The Celotex Co., 111 W. Washington St., Chicago, Ill.

701. *Celotex Insulating Lumber.* An insulating material made from cane fibre in form of boards of various lengths and thicknesses. Specifications, physical properties and tests. Several catalogs, booklets and leaflets.

Insulite Division, Minnesota & Ontario Paper Company, International Falls, Minn.

487. *Universal Insulite in Building Construction.* Describes a clean, sanitary, odorless and vermin proof board made from selected waterproofed wood fibres, felted into light, strong, uniform sheets. Examples are given for use indoors and outdoors together with details and useful data. 37 pp. Ill. 8½ x 11 in.

United States Mineral Wool Co., 280 Madison Ave., New York.

83. *The Uses of Mineral Wool in Architecture.* Illustrated booklet. Properties of insulation against heat, frost, sound, and as a fire-proofing, with section drawings and specifications for use. It gives rule for estimate and cost. Size 5¼ x 6⅝ in. 24 pp.

IRON AND STEEL—See also Metals

The American Rolling Mill Co., Middletown, Ohio.

658. *The Story of Commercially Pure Iron.* A most interesting booklet recounting the historical development of iron and its present day manufacture in commercially pure, durable form. 48 pp. Ill. 6 x 9 in.

682. *What's Under the Galvanized Coating?* A booklet describing the process of galvanizing, its protective service and also the necessity for pure iron as a basis for galvanizing. 16 pp. Ill. 3¼ x 6¼ in.

KITCHEN EQUIPMENT—See also Stoves

Bramhall, Deane Co., 261-A West 36th St., New York.

59. *The Heart of the Home.* Booklet, illustrated. Deane's French Ranges (all fuels), cook's tables and plate warmers. Size 6 x 9 in. 32 pp.

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

LATH, EXPANDED WOOD

Expanded Wood Lath Corporation, 818-155 N. Clark St., Chicago, Ill.

605. *Ex-Wo Expanded Wood Lath.* An expanded wood lath made in sheets and attached to a sheathing paper. Description, directions for installation, specifications and tests. 2 and 4 pp. Ill. 9 x 11½ and 7½ x 11 in.

LATH, METAL

American Steel & Wire Co., Chicago, Ill.

228. *Stucco Houses Reinforced With Triangle Mesh Fabric.* A pamphlet containing valuable data on stucco work with tables of qualities of material and many illustrations of houses covered with stucco applied on Triangle Mesh Fabric. 24 pp. Ill. 6 x 9 in.

Concrete Engineering Co., Omaha, Neb.

346. *How to Use Ceco Lathing Materials.* An illustrated treatise on the use of expanded metal lath. Contains construction details and complete specifications, with sample piece of lath in pocket on cover of book. 16 pp. Ill. 8½ x 11 in.

The General Fireproofing Co., Youngstown, Ohio.

592. *Building for Permanence and Beauty.* A booklet containing illustrations and plans of residences with stucco exteriors and describing proper stucco construction on Herringbone Metal Lath. 36 pp. Ill. 5⅛ x 7⅝ in.

685. *The Right Angle.* A monthly magazine devoted to fireproof construction involving the use of metal lath, expanded metal and steel lumber. Specifications and details. Circulation free to architects and contractors. 16 pp. Ill. 8½ x 11 in.

Truscon Steel Company, Youngstown, Ohio.

316. *Hy-Rib and Metal Lath.* Tables, general data and illustrations of Hy-rib and metal lath construction. 6 pp. Ill. 8½ x 11 in.

LAUNDRY EQUIPMENT

Chicago Dryer Co., 2210 N. Crawford Ave., Chicago, Ill.

66. *Laundry Appliances.* Illustrated catalog. Descriptions of Laundry Dryers, Electric Washing Machines and Ironing Machines, especially adapted for use in residences, apartment buildings and small institutions. Size 8½ x 11 in. 48 pp.

The Pfaudler Company, Rochester, N. Y.

581. *Glass Lined Steel Laundry Chute.* Catalog describing a glass lined steel laundry chute with flushing ring at top and drain connection at bottom, specifications, dimensions and details adapted to hospitals and hotels. 14 pp. Ill. 5¼ x 7⅝ in.

LIGHTING—See also Electrical Equipment

Frank Adam Electric Co., 3649 Bell Ave., St. Louis, Mo.

629. *The Control of Lighting in Theatres.* A book describing means for complete control of lighting the stage, auditorium and other parts of theatres with distribution schedules and specifications. Also applications of control to Masonic buildings, schools and colleges. 32 pp. Ill. 8 x 11 in.

Cooper Hewitt Electric Company, 95 River Street, Hoboken, N. J.

553. *Industrial Lighting Briefs.* No. 1 deals with Industrial Lighting in theory and practice. No. 2 deals with the engineering of illumination with Cooper Hewitt Lamps. No. 3 deals with the quickness of response of the Hand to Eye. Each 4 pp. 8 x 10½ in.

E. Erikson Electric Co., 6 Portland St., Boston, Mass.

618. *Erikson Reflectors, Catalog No. 90.* Description of and details for installing reflectors in show windows, display cases, art galleries, rug racks, banks, churches, and other buildings. 32 pp. Ill. 6¼ x 9½ in.

I. P. Frink, Inc., 24th St. and 10th Ave., New York.

150. *Light Service for Hospitals. Catalogue 421.* A booklet illustrated with photographs and drawings, showing the types of light for use in hospitals, as operating table reflectors, linolite and multilite concentrators, ward reflectors, bed lights and microscopic reflectors, giving sizes and dimensions, explaining their particular fitness for special uses. Size 7 x 10 in. 12 pp.

218. *Picture Lighting. Booklet 422.* A pamphlet describing Frink Reflectors for lighting pictures, art galleries, decorated ceilings, cove lighting, the lighting of stained glass, etc., and containing a list of private and public galleries using Frink Reflectors. 24 pp. Ill. 5¼ x 7 in.

219. *Frink Reflectors and Lighting Specialties for Stores. Catalog No. 424.* A catalog containing a description of the Frink Lighting System for Stores; the Synthetic System of Window Illumination; and a number of appliances to produce the most effective lighting of displayed objects. 20 pp. Ill. 8 x 11 in.

220. *Frink Lighting Service for Banks and Insurance Companies. Reflectors. Catalog No. 425.* A very interesting treatise on the lighting of offices; with details of illustrations and description of lamps and reflectors. Contains a list, covering several pages, of banks using Frink Desk and Screen Fixtures. 36 pp. Ill. 8¼ x 11 in.

Harvey Hubbell, Inc., Bridgeport, Conn.

401. *Hubbell Flush Door Receptacles.* Description of a safe, convenient and practical wall outlet de luxe for fine residences, clubs, hotels, public buildings and offices. 4 pp. Ill. 8 x 10 in.

Mitchell Vance Co., Inc., 503-511 West 24th St., New York, N. Y.

369. *Catalog No. 25.* A descriptive catalog, with prices, of the "T. R. B." Lighting Unit, for perfect distribution of light without glare and without shadows. 24 pp. Ill. 8 x 10 in.

LINOLEUM

Bonded Floors Co., Inc., 1421 Chestnut St., Philadelphia, Pa.

719. *Linoleum.* A standard specification of the material, workmanship and guarantee, with valuable comments and suggestions. Also additional clauses for insertion in specifications for Masonry, Heating, etc., Navy Department specification for battleship linoleum and details of installation. 8 pp. Ill. 8½ x 11 in.

LIME

The Ohio Hydrate & Supply Co., Woodville, Ohio.

494. *A Job that Took a Million Years.* A description of how limestone is formed and how it is later converted into lime. All the processes are shown in detail and the uses of lime are illustrated. 16 pp. Ill. 8½ x 11 in.

LINCRUSTA-WALTON—See also Wall Covering

The Lincrusta-Walton Company, Hackensack, N. J.

519. *Lincrusta-Walton.* This book gives directions for buying, caring for and applying Lincrusta-Walton; together with color chart and many pages showing patterns. 67 pp. 8½ x 11 in. Ill. Bound in boards.

LOCKERS, STEEL—See Factory Equipment

LUMBER

Arkansas Soft Pine Bureau, Little Rock, Ark.

649. *Arkansas Soft Pine Handbook.* An exceptionally well prepared book containing technical descriptions, grading rules, standard molding designs including those by the American Institute of Architects and the National Lumber Manufacturers' Association. Price 50 cents. 82 pp. Ill. 8½ x 11 in.

E. L. Bruce Co.. Memphis, Tenn.

533. *Now the Cedar Clothes Closet.* A book illustrated in colors describing "Bruce Cedaline," for lining clothes closets as a complete protection against moths. 12 pp. Ill. 4¼ x 6 in.

The Long-Bell Lumber Co., R. A. Long Building, Kansas City, Mo.

203. *From Tree to Trade.* This book tells the story of the manufacture of lumber. Gives an idea of the scope of the business and the care and attention given to the manufacture and grading of Long-Bell trade-marked products. 100 illustrations. 48 pp. 8½ x 11 in.

The Pacific Lumber Company of Illinois, 2060 McCormick Bldg., Chicago, Ill.

363. *Construction Digest*—The use of California Redwood in residential and industrial construction. Contains illustrations, grading rules, specifications and other technical data for architects and builders. 16 pp. Ill. 8½ x 11 in.

364. *Engineering Digest*—The use of California Redwood in industrial construction and equipment for factories, railroads, mines and engineering projects. 16 pp. Ill. 8½ x 11 in.

Shevlin, Carpenter & Clarke Co., Minneapolis, Minn.

721. *The Romance of Shevlin Pine.* A booklet illustrating and describing the persons who engage in the lumber industry from the timber cruiser to the executive. 16 pp. Ill. 6 x 9 in.

LUMBER, ASBESTOS

Asbestos Shingle, Slate & Sheathing Co., Ambler, Pa.

54. *Ambler Asbestos Building Lumber.* Catalog illustrated. Describes uses of this fireproof product for both exteriors and interiors. Tables of sizes and illustrations of various types of buildings in which it has been used. Size 8½ x 11 in. 32 pp.

MAIL BOXES

The Chism Mail Box Co., 2511 Union Central Building, Cincinnati, Ohio.

704. *The Chism Mail Box.* A folder describing a mail box to prevent the theft of mail in apartment houses, which is approved by and complies with the regulations of the U. S. Post Office Department. 4 pp. Ill. 8½ x 11 in.

MAIL CHUTES

Cutler Mail Chute Co., Rochester, N. Y.

294. *The Cutler Mail Chute. Model F.* Describes the Cutler Mail Chute in its standard form, known as Model F. Contains data for rough floor openings not included in the Mail Chute contract. 16 pp. Ill. 4 x 9¼ in.

MANTELS

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

90. *Wood Mantels. Portfolio.* Wood mantel designs of various types and openings, giving dimensions, projections and showing fireplace grate designs. Size 9 x 6¼ in. 32 pp.

MARBLE—See Stone

Appalachian Marble Co., Knoxville, Tenn.

715. *Appalachian Tennessee Marble.* A series of six colored plates, description of physical properties, standard sizes of floor tile, specifications for laying floor tiles and for erecting base, wainscoting, bank screens and other standing work. Standard filing folder. 23 pp. Ill. 8½ x 11¼ in.

The Georgia Marble Co., Tate, Pickens Co., Ga., New York Office, 1226 Broadway.

634. *Why Georgia Marble is Better.* Booklet 3⅜ x 6 in. Gives analysis, physical qualities, comparison of absorption with granites, opinions of authorities, etc.

635. *Convincing Proof.* Booklet 3⅜ x 6 in. 8 pp. Classified list of buildings and memorials in which Georgia Marble has been used, with names of architects and sculptors.

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METALS—See also Iron and Steel—Roofing

American Brass Co., Main Office, Waterbury, Conn.

138. *Price List and Data Book.* Illustrated. Loose-leaf Catalog. Covers entire line of Sheets, Wire Rods, Tubes, etc., in various metals. Useful tables. Size 3⅞ x 7 in. 168 pp.

385. *Copper Products.* Illustrated price list and tables of weights. Covers copper for roofing purposes, including strip copper for forming into leaders, gutters, valleys, flashings, etc. 64 pp.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

452. *Reference Book. Pocket Edition.* Covers the complete line of Sheet and Tin Mill Products. 168 pp. Ill. 2½ x 4½ in.

Bridgeport Brass Co., Bridgeport, Conn.

483. *Seven Centuries of Brass Making.* A brief history of the ancient art of brass making and its early (and even recent) method of production—contrasted with that of the Electric Furnace Process—covering tubular, rod and ornamental shapes. 80 pp. Ill. 8 x 10½ in.

Copper & Brass Research Association, 25 Broadway, New York, N. Y.

466. *How to Build a Better Home.* A book on building written for the prospective builder. It contains keyed illustrations of houses and details of houses and should be of value to architects in explaining technical terms to clients. 30 pp. Ill. 7¾ x 10½ in.

Rome Brass & Copper Company, Rome, N. Y.

473. *Price List No. 70.* A loose-leaf binder containing full price list of Rome Quality products, together with useful tables. 5⅛ x 7¼ in.

METAL MOLDINGS

National Metal Molding Co., Pittsburgh, Pa.

152. *Hand-book for the Man on the Job.* An illustrated book of fittings and methods with description and instructions for installing National Metal Molding under all conditions; a book meant to be conveniently carried and used on the job. Size 4⅝ x 6 in. 102 pp.

MILLWORK—See also Lumber—Building Construction—Doors and Windows

MORTAR—See also Cement

Louisville Cement Company, Inc., Louisville, Ky.

311. *Brixment, the Perfect Mortar.* The reading of this little book gives one a feeling that definite valuable information has been acquired about one of the oldest building materials. Modern science has given the mason a strong water-resisting mortar with the desirable "feel" of the best rich lime mortar. 16 pp. Ill. in colors. 5½ x 7¾ in.

MORTAR COLORS—See also Paints, Stains, Varnish

Ricketson Mineral Paint Works, Milwaukee, Wis.

376. *Ricketson Mortar Colors.* Two interesting folders with color card for these well known fadeless mortar colors in use for 35 years. 3¼ x 6 in.

OFFICE EQUIPMENT

The General Fireproofing Co., Youngstown, Ohio.

686. *Allsteel Office Furniture.* A descriptive catalog of steel office furniture, filing cabinets, desks, tables, counterheights, steel shelving, fireproof safes. 96 pp. Ill. 5½ x 7¾ in.

PAINTS, STAINS, VARNISHES—See also Waterproofing

Joseph Dixon Crucible Co., Jersey City, N. J.

324. *Dixon's Silica-Graphite Paint.* A pamphlet describing the physical properties of silica-graphite paint and especially the wide difference between it and other protective paints. Contains also sample color card with specifications. 20 pp. and 6 pp. in color card. Ill. 3¼ x 6⅛ in.

National Lead Company, 111 Broadway, New York, N. Y.

389. *Color Harmony.* Color card for glass finish and flat finish together with useful notes on painting and a collection of approximate formulas for obtaining the colors shown on the color card. 8 pp. Ill. 3⅜ x 8½ in.

708. *Early American Architecture.* An attractive portfolio of selected sketches and measured drawings showing Colonial and Georgian design containing 34 plates, 8¼ x 10¾ in. Suggested color schemes are included.

The New Jersey Zinc Co., 160 Front St., New York, N. Y.

227. *Painting Specifications.* A booklet full of useful information concerning paint mixtures for application on various surfaces.

727. *Mapaz No. 1 Handbook.* A combination note book and handbook describing the characteristics of zinc oxide and its use in painting. Also use of lace for stencils and tables for various color mixtures. 22 pp. text. 112 blank pp. 2 x 4½ in.

Ripolin Co., The, Cleveland, Ohio.

410. *Ripolin Specification Book,* 8 x 10¼ in., 12 pp. Complete architectural specifications and general instructions for the application of Ripolin, the original Holland Enamel Paint. Directions for the proper finishing of wood, metal, plaster, concrete, brick and other surfaces, both interior and exterior, are included in this Specification Book.

Standard Varnish Works, 443 Fourth Ave., New York, N. Y.

565. *Immaculate Distinction.* A book describing Satinette Enamel, and enduring white enamel for interior and exterior use. Specifications are given for use on new and old work, metal, plaster, etc. 22 pp. Ill. 5 x 7 in.

Standard Varnish Works, 443 Fourth Ave., New York,

566. *Architectural Reference Book, Third Edition.* A readily accessible and concise compilation of practical finishing information from which specifications readily can be written on varnishes, stains, fillers and enamels. 24 pp. Ill. in colors with samples on wood, etc. 8½ x 11 in.

PILES, CONCRETE

Raymond Concrete Pile Co., 140 Cedar St., New York.

156. *Raymond Concrete Piles—Special Concrete Work.* A booklet with data concerning the scope of the Raymond Concrete Pile Co., for special concrete work. It classifies piles, showing by illustration, text and drawings, the relative value of special shape and manufacture of piles. It gives formulæ for working loads, and relative economy. Size 8½ x 11⅛ in. 60 pp.

PIPE—See also Metals

Bridgeport Brass Company, Bridgeport, Conn.

556. *Brass Pipe and Piping; When and How it Should be Used, Bulletin No. 15.* This book contains valuable tables, charts and examples for the design of hot water installations, with illustrations of details and connections. It also discusses the use of pipe of different materials; various processes for preventing rust and corrosion in iron and steel pipes. It is a valuable treatise for all architects and engineers. 47 pp. Ill. 8 x 10½ in.

A. M. Byers Company, Pittsburgh, Pa.

679. *What is Wrought Iron?* Bulletin 26 A. Contains the definition of wrought iron, methods of manufacture, chemical and physical characteristics; advantages of wrought iron as a pipe material; service records from old buildings equipped with Byers Genuine Wrought Iron Pipe. How to tell the difference between iron and steel pipe. 40 pp. Ill. 8 x 10¾ in.

686. *The Installation Cost of Pipe,* Bulletin 38. Contains cost analysis of a variety of plumbing, heating, power and industrial systems, with notes on corrosive effects in different kinds of service. 32 pp. Ill. 8 x 10¾ in.

The Duriron Company, Dayton, Ohio.

548. *Duriron Acid-Proof Drain Pipe.* This is a handbook for the architect and engineer on Duriron drain pipe fittings, exhaust fans, sinks, etc. Contains specifications for installations, detail dimensioned drawings, reports on corrosive tests, long partial list of successful installations, etc. 20 pp. Ill. 8 x 10½ in.

National Tube Co., Frick Bldg., Pittsburgh, Pa.

670. *National Bulletin No. 25B. 3rd Edition.* Devoted to the installation of steel pipe in large buildings, architectural anti-corrosion engineering, gas piping, specifications and tables of strength and properties. 74 pp. Ill. 8½ x 10¾ in.

Rome Brass and Copper Company, Rome, N. Y.

509. *Bulletin No. 1. Seamless Brass Pipe.* This bulletin illustrates in colors nine installations of hot water heaters between range boiler, basement furnace, tank and instantaneous heaters for one and two-family houses and larger buildings. Contains also a number of estimating and designing tables, rules and formulas. 22 pp. Ill. 7½ x 11¾ in.

A. Wyckoff & Son Co., Elmira, N. Y.

397. *Wyckoff Wood Pipe. Catalog No. 42.* A description of machine-made woodstave pipe and Wyckoff's express steam pipe casing. Contains also a number of pages of useful formulas and tables for hydraulic computations. 92 pp. Ill. 6 x 9 in.

PIPE COVERING

The Philip Carey Co., Lockland, Cincinnati, Ohio.

379. *Pipe and Boiler Coverings. Catalog 1362.* A catalog and manual pipe and boiler coverings, cements, etc. Contains a number of valuable diagrams and tables. 71 pp. Ill. 6 x 9 in.

PLUMBING EQUIPMENT—See also Drains

Bridgeport Brass Co., Bridgeport, Conn.

461. *Plumbing Supplies.* Catalog of adjustable swivel traps; basin and bath supplies and waste; basin and sink plugs; low tank bends; iron pipe sizes of brass pipe. 20 pp. Ill. 8 x 10½ in.

Crane Company, 836 So. Michigan Ave., Chicago, Ill.

240. *General Plumbing Catalogue.* A very complete and well illustrated booklet describing the complete line of Crane plumbing goods. 80 pp. 8½ x 11 in.

Philip Haas Company, Dayton, Ohio.

524. *Catalog B.* This catalog contains a complete description of the full line of waterclosets made by this company, together with illustrations of combinations for every type or class of service. Wall hanging closets are an innovation here fully described. A feature of interest to designers is the series of roughing in plates with dimensions. 91 pp. Ill. 6⅛ x 9¼ in.

Jenkins Bros., 80 White St., New York, N. Y.

236. *Jenkins Valves for Plumbing Service.* This booklet contains all necessary information about Jenkins Valves commonly used in plumbing work. 16 pp. Ill. 4¼ x 7¼ in. Stiff paper cover.

Kohler Company, Kohler, Wisconsin.

209. *"Kohler of Kohler."* A booklet on enameled plumbing ware describing processes of manufacture and cataloging staple baths, lavatories, kitchen sinks, slop sinks, laundry trays, closet combinations. 48 pp. Ill. 5⅛ x 8 in. Roughing-in Measurement Sheets 6 x 8 in.

531. *Catalog F.* This is a complete catalog of Kohler enamelled ware for plumbing installations, together with high grade fittings. There is also a brief and interesting description of the manufacture of high grade enamelled ware and a statement of the facts about Kohler village one of the discussed experiments in modern industrial town building. 216 pp. cloth bound. Ill. 7½ x 10⅝ in.

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BRASS PIPE
in Service 67 Years Without Repairs

The original Brass pipe hot and cold water service in the old Parker House, Boston, has seen 67 years of continuous service without a repair; and apparently is good for many years more of equally satisfactory service.

THE OLD PARKER HOUSE building was completed in 1856. In 1890 an annex was built. It, too, was piped with Brass.

The hotel's chief engineer says the only repair made to the Brass piping in either building has been replacement of a short section broken by an employee who swung from it doing gymnastics.

In recent years the city of Boston has materially increased its water pressure without any effect on the Brass piping, testifying to its unweakened condition.

Sixty-seven years of trouble-proof service, an uninterrupted supply of rust-free hot and cold water—that is the kind of service you get from Brass pipe.

"Brass is cheaper because you pay for it only ONCE"

COPPER & BRASS
RESEARCH ASSOCIATION
25 Broadway ~ New York

REFERENCE LIST OF BUSINESS LITERATURE—Continued

PLUMBING EQUIPMENT

Thomas Maddock's Sons Company, Trenton, N. J.

696. *Vitreous China Plumbing Fixtures.* A valuable and complete catalog of vitreous china lavatories, drinking fountains, bidets, water closets, urinals, slop sinks, bathtubs, kitchen sinks and laundry trays, also seats, faucets, bathroom fixtures and accessories. Completely illustrated with roughing in diagrams. 242 pp. Ill. 8 x 11 in.

Speakman Company, Wilmington, Del.

691. *Speakman Showers and Fixtures, Catalog H.* A complete catalog treating of everything pertaining to the mixing and control of water used in all kinds of shower and tub baths, lavatories and sinks, also strainers, drains and traps. Complete roughing-in measurements are included. A valuable catalog. 20 pp. Ill. 4½ x 7½ in.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

725. *The Powers Shower Mixer, Bulletin No. 154.* Description and details of a shower bath mixer that insures uniform water temperature regardless of disturbance of initial water pressure. 4 pp. Ill. 6⅝ x 9¼ in.

The Vulcan Brass Manufacturing Co., Cleveland, Ohio.

678. *Paragon Brass Goods, Catalog C.* New catalog showing sectional drawings, illustrations and text describing exclusive feature of "Paragon" self closing basin and sink faucets and stops; high pressure ball cocks, vitreous china bubblers, compression and quick-compression work. 60 pp. Ill. 7⅛ x 10½ in.

PUMPS

The Dayton Pump and Manufacturing Company, Dayton, Ohio.

475. *Electric House Pumps and Water Supply Systems.* A heavy paper binder containing illustrated bulletins 8½ x 11 in. These bulletins describe pumps as well as complete automatic electric and gasoline water supply systems and all accessories, together with specifications, detail drawings and tables of dimensions. 48 pp.

The Goulds Mfg. Co., Senaca Falls, N. Y.

387. *Power Pump Bulletins.* There are 22 of these bulletins treating on piston, plunger, air pressure, vacuum, triplex and centrifugal pumps. Bulletin 112 and Bulletin 122 containing the theory of pumps together with power pump data are of especial value to engineers in the offices of architects. 16 to 36 pp. Ill. 8 x 10 in.

Leader-Trahern Co., Decatur, Illinois.

707. *The Pumping Engineer, No. 2.* A catalog of electric driven, gasoline engine and hand power pumps for water systems with hydro-pneumatic tanks; force, milk and special pumps and accessories. Engineering data, specifications, details and dimensions. 124 pp. Ill. 4 x 7 in.

F798. *Leader Built Tanks, Catalog TC-1.* A catalog of hydro-pneumatic, water storage, receivers, septic and tanks for other uses. Data tables and piping diagrams. 30 pp. Ill. 4 x 7 in.

REFRIGERATION

The Automatic Refrigerating Co., Hartford, Conn.

208. *The Mechanics of Automatic Refrigeration and Automatic Refrigeration for Hospitals and Sanatoriums.* Two essential booklets for the library of designers and specification writers. 24 and 28 pp. Ill. 8½ x 11 in.

370. *Automatic Refrigeration for Retail Markets.* A valuable treatise on the subject matter mentioned in the title. 30 pp. Ill. 8½ x 11 in.

Baker Ice Machine Co., Inc., Omaha, Nebraska.

601. *Baker System Refrigeration.* A catalog explaining the application of refrigeration for hotels, hospitals, institutions and restaurants requiring up to 50 ton daily capacity including mechanical details and specifications. 20 pp. Ill. 9 x 12 in.

Jamison Cold Storage Door Co., Hagerstown, Md.

509. *Heavy Duty Cold Storage Doors. Catalog No. 10.* Complete description of both hinged and sliding cold storage doors for every equipment. Also description of cold storage windows and ice chutes. 79 pp. Ill. 5¾ x 9 in.

REFRIGERATORS

The Jewett Refrigerator Company, 27 Chandler Street, Buffalo, N. Y.

655. *Manual of Refrigerators.* This manual completely describes the construction of refrigerators for use in hotels, clubs, hospitals, institutions and residences, with specifications. Numerous plans showing size and arrangement of refrigerators in kitchens, service and lunch rooms are included. 30 pp. Ill. 8½ x 11 in.

698. *Jewett Solid Porcelain Refrigerators.* This improved refrigerator has an interior finish of one-piece solid porcelain ware for both food and ice compartments. Complete line with dimensions, types and prices. 23 pp. Ill. 8½ x 11 in.

McCray Refrigerator Co., Kendallville, Ind.

472. *Refrigerators and Cooling Rooms. Cat. 53.* A catalog of cooling equipment for hotels, restaurants, hospitals, institutions, colleges and clubs. Catalog No. 96 deals with refrigerators for residences. 52 pp. each. Ill. in colors. 7½ x 10 in.

REINFORCING STEEL—See also Concrete, Reinforced

Rail Steel Products Association, Reinforcing Bar Division, Arcade Bldg., St. Louis, Mo.

582. *Rail Steel for Concrete Reinforcing.* A book describing the manufacturing, fabrication and physical properties of re-rolled, billet and rail steel bars with specifications for their use. 84 pp. Ill. 8½ x 11 in.

RESTAURANT EQUIPMENT—See Kitchen Equipment

ROOFING—See also Slate—Metals—Shingles

American Brass Company, Main Office, Waterbury, Conn.

515. *Copper Roofing. Service Sheet.* This service sheet contains details for laying copper roofing together with standard specifications. 17 x 22 in. folding to 8½ x 11 in. printed both sides.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

463. *Copper—its Effect Upon Steel for Roofing Tin.* Describes the merits of high grade roofing tin plates and the advantages of the copper-steel alloy. 28 pp. Ill. 8½ x 11 in.

Asbestos Shingle, Slate & Roofing Co., Ambler, Pa.

53. *Ambler Asbestos Corrugated Roofing.* Catalog gives complete data for specifying, drawings, methods of application, tables, etc. Size 8½ x 11 in. 20 pp.

The Barber Asphalt Company, Land Title Bldg., Philadelphia, Pa.

422. *Standard Trinidad Built-Up Roofing Specifications.* Contains two specifications for applying a built-up roof over boards and two for applying over concrete. Gives quantities of materials and useful data. 8 pp. 8 x 10½ in. Ask at same time for Good Roof Guide Book. 32 pp. Ill. 6 x 9 in.

702. *Specifications.* A pamphlet containing standard specifications for Genasco Standard Trinidad Lake Asphalt Built-up Roofing, Genasco Economy Trinidad Lake Asphalt Built-up Roofing, Genasco Membrane Waterproofing and Genasco Asphalt Flooring. Illustrated with sketches showing construction. 16 pp. Ill. 8 x 11½ in.

The Philip Carey Co., Lockland, Cincinnati, Ohio.

378. *Architects' Specification Book on Built-Up Roofing.* A manual for detailers and specification writers. Contains complete details and specifications for each type of Carey Asphalt Built-Up Roof. 20 pp. Ill. 8½ x 11 in.

The Copper and Brass Research Association, 25 Broadway, New York, N. Y.

468. *Copper Roofing.* Weights of various roofing materials. Up-to-date practice in the laying of copper roofs—Batten or wood rib method. Standing seam method, flat copper roofs. Copper shingles. Suggestions for avoiding error and obtaining the full value of copper. Decorative effects and how to obtain them. Flashings, reglets, gutters and leaders. Cornices. Copper-covered walls. Specifications. 32 pp. Ill. 8½ x 11 in.

The Edwards Manufacturing Company, Cincinnati, Ohio.

535. *Shingles and Spanish Tile of Copper.* This book, illustrated in colors, describes the forms, sizes, weights and methods of application of roof coverings, gutters, downspouts, etc., of copper. 16 pp. Ill. in special indexed folder for letter size vertical files.

Ludowici-Celadon Co., Chicago, Ill.

120. *Roofing Tile.* A detailed Reference for Architects' Use. Sheets of detailed construction drawings to scale of tile sections of various types and dimensions, giving notes of their uses and positions for various conditions of architectural necessity. Size 9½ x 13½ in. 106 plates.

154. *The Roof Beautiful.* Booklet. Well illustrated with photographs and drawings, giving history and origin of roofing tile, and advantages over other forms of roofing. Types shown by detailed illustrations. Size 8 x 10¼ in. 32 pp.

The Richardson Company, Lockland, Cincinnati, Ohio.

492. *Viskalt Membrane Roofs.* Contains specifications for applying Membrane roof over boards and also for applying over concrete. Illustrated with line drawings of several approved methods of flashings. 3 pp. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

496. *Tudor Stone Roofs.* This leaflet discusses colors and sizes of Tudor hand-wrought slates; deals with the service given to architects and tells how the material is quarried for each product after careful drawings and specifications are prepared in co-operation with architects. Special grades are described in detail and illustrations are given of buildings with Tudor slate roofs. Contains also specifications of laying slate. 4 pp. Ill. 8½ x 11 in.

571. *Tudor Stone Roofs.* A brochure describing the 7 special grades of Tudor Stone and the 7 grades of commercial slate produced by this company with illustrations of many structures on which it has been used. 28 pp. Ill. 6 x 9½ in.

Vendor Slate Co., Easton, Pa.

333. Occasional brochures on architecturally pertinent phases of roofing slate sent on request. See also listing under Slate.

ROOF CONSTRUCTION

Porete Mfg. Co., 2 Verona Ave., Newark, N. J.

258. *Porete Roof Decks.* An illustrated circular describing Porete (a new light-weight concrete) for use in fireproof roofs for all buildings. 4 pp.

ROOF-LIGHTS—See Glass Construction

SANDSTONE—See Stone

SASH—See Doors and Windows

SASH CHAIN AND CORD

Samson Cordage Works, Boston, Mass.

586. *Samson Sash Cord.* Specifications and condensed descriptions of Samson spot window sash cord, Samson mahogany wire center sash cord and accessories. 24 pp. Ill. 3½ x 6¼ in.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

at daylight spoils from looted villages.
Almost daily there was a clash with lo-
journal
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ce 65,000 seeds from a single

CHAS·A·STEVENS & BROS.
DAYLIGHT BASEMENT
ham Dresses
Special

Capitalizing The Value *of* 3-Way Simplex Sidewalk Lights

The Chas. A. Stevens & Bros. store uses all the space under their sidewalks—both State Street and Wabash Avenue—for selling fine merchandise. All the sidewalks from building to curb are built in 3-Way Simplex Sidewalk Lights.

So satisfactory has this installation proven in 5 years use that Stevens feature the daylight in their advertising.

You have merchants in your city who would welcome this suggestion.

3 Perfected Constructions

3-WAY ARMORED GLASS
Instantly Replaceable Lenses

SIMPLEX FRESNEL
71% Daylight

3-WAY STANDARD SIMPLEX
Round or Square Glass

Ask us to tell you why 3-Way Sidewalk Light Constructions are watertight—and stay watertight

AMERICAN 3 WAY-LUXFER PRISM CO.
CHICAGO NEW YORK

The Mark of a Perfect Sidewalk

AMERICAN 3 WAY-LUXFER PRISM CO.
CHICAGO NEW YORK

The Mark of a Perfect Sidewalk

AMERICAN 3 WAY-LUXFER PRISM CO.

DAYLIGHT ENGINEERS

1305 S. 55th St., Cicero, Ill. 358-368 Webster Ave., Long Island City, N. Y.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

SCREENS

American Wire Fabrics Company, 208 So. La Salle St., Chicago, Illinois.

305. *Catalog of Screen Wire Cloth.* A catalog and price list of screen wire cloth, black enamelled, galvanized, aluminoid, copper, bronze. 30 pp. Ill. 3½ x 6¼ in.

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

353. *Screen your Home in the Higgin Way.* A description of Higgin door and window screens with practical data. 16 pp. Ill. 8½ x 11½ in.

New Jersey Wire Cloth Company, 614 South Broad St., Trenton, N. J.

409. *A Matter of Health and Comfort. Booklet No. 2331.* A booklet telling all about screens, the durability of copper and its superiority over all other metals for screen purposes. 16 pp. Ill. 5 x 7¾ in.

SHINGLES—See also Roofing

The Philip Carey Co., Lockland, Cincinnati, Ohio.

381. *Carey Asfaltslate Shingles.* Folder containing illustrations of attractive buildings and residences on which Carey Asfaltslate Shingles have been used. Describes this type of shingle, showing its special claims and advantages.

SIDEWALK LIGHTS—See also Vault Lights

SLATE—See also Roofing

Vendor Slate Co., Inc., Easton, Pa.

332. *The Vendor Book of Roofing Slate for Architects.* Contains original information on slate in various architectural uses; history, geology, sundry practical matters; complete descriptive classification; extended treatise on architectural roof design and specifications. 24 pp. Ill. 8½ x 11 in.

STAINS—See also Paints, Stains, Varnishes

STAIRWAYS—MOVABLE

The Bessler Movable Stairway Co., Akron, Ohio.

541. *The Modern Way Up.* A book describing a stairway that helps utilize attic space. It folds up in the ceiling and is concealed when not in use. Letters are given from contented users. 24 pp. Ill. 4¾ x 7¾ in.

STEEL JOIST CONSTRUCTION

Truscon Steel Co., Youngstown, Ohio.

641. *Truscon Steel Joist Data Book.* Complete data of steel joists giving properties, dimensions, safe loads, coefficients of deflection, details of connections, specifications, directions for installations. 32 pp. Ill. 8½ x 11 in.

STONE

The Appalachian Marble Company, Knoxville, Tenn.

503. *Appalachian Tennessee Marble.* A new booklet on the qualities to be demanded in marble and a treatise on Tennessee marble by T. Nelson Dale (Retired Geologist, U.S.G.S.). Contains also illustrations of the plant of the company, buildings in which Appalachian Tennessee Marble has been used and four-color process plates of the six major Appalachian marbles. In tough paper indexed cover. 12 pp. Ill. 8½ x 11 in.

Indiana Limestone Quarrymen's Assn., P. O. Box 503, Bedford, Ind.

265. *Folders, Series D.* Structural detail and data sheets showing methods of detailing cut stone work in connection with modern building construction. 4 pp. each. 8½ x 11 in.

306. *Standard Specifications for Cut Stone Work.* This is Vol. III, Series "A-3," Service publications on Indiana Limestone, containing Specifications and Supplementary Data, relating to best methods of specifying and using this stone for all building purposes. This valuable work is not for general distribution. It can be obtained only from a Field Representative of the Association or through direct request from architect written on his letterhead. 56 pp. Ill. 8½ x 11 in.

693. *Indiana Limestone Homes, Series B, Vol. 5.* A portfolio containing sixteen designs for small and moderate-sized dwellings of different styles of architecture and sizes of lots. Plot plan, floor plans, perspective and description. Free to architects and draftsmen requesting same on employer's business stationery. 84 pp. Ill. 8½ x 11 in.

National Building Granite Quarries Asso., Inc., 31 State Street, Boston, Mass.

416. *Architectural Granite No. 1 of the Granite Series.* This booklet contains descriptions of various granites used for building purposes; surface finishes and how obtained; profiles of moldings and how to estimate cost; typical details; complete specifications and 19 plates in colors of granite from various quarries. 16 pp. Ill: 8½ x in.

STORE FRONTS

Detroit Show Case Co., Detroit, Mich.

77. *Designs.* A booklet. Store fronts and display window designs, giving plans and elevations, and descriptions. Size 9¼ x 12 in. 16 pp.

78. *Details.* Sheets of full size details of "Desco" awning transom bar covers, sill covers, side, head and jamb covers, ventilated hollow metal sash and profile of members. Size 16 x 21½ in. 3 sheets.

The Kawneer Company, Niles, Mich.

467. *A Collection of Successful Store Front Designs.* Illustrations of recently erected modern store fronts with all framing covered with solid copper. Maximum show window surface secured by these designs. Many classes of occupancy shown. 64 pp. Ill. 6¾ x 9¼ in.

530. *Catalog L, 1922-1923 Edition.* Details of solid copper store fronts construction. This is a treatise on the installation of copper store fronts and contains sectional and detail views of Kawneer sash, corner and division bars, jambs, sill and transom bar coverings and other members. Intended for the detailer. 32 pp. Ill. 8½ x 11 in.

STOVES

New Process Stove Co., Division of American Stove Co., 4301 Perkins Ave., Cleveland, Ohio.

457. *Catalog No. 148.* A complete catalog of gas ranges from a single cover hot plate to the most elaborate hotel range. Also lists gas heaters for rooms. 110 pp. Ill. 7 x 10 in.

Reliable Stove Company, Division of American Stove Co., Cleveland, Ohio.

460. *Reliable Angleiron Gas Ranges.* A pamphlet illustrating hot plates, laundry stoves and a complete line of gas cooking stoves and ranges equipped with the Lorain Oven Heat Regulator. 8 pp. Ill. 8 x 11 in.

STUCCO—See also Cement

Portland Cement Association, 347 Madison Ave., N. Y. C.

594. *Portland Cement Stucco.* Illustrated leaflet of recommended practice for Portland Cement Stucco. Contains data on materials, proportions, application and curing. Table of colors for various tints, photographs of surface textures and drawings of construction details also given. 15 pp. Ill. 8½ x 11 in.

STUCCO BASE

The Bishopric Manufacturing Company, Cincinnati, Ohio.

451. *Bishopric for All Time and Clime.* A booklet describing Bishopric materials; giving building data, detailed drawings and specifications. Illustrated with half tones from photographs of houses built of Bishopric materials. 52 pp. Ill. 8 x 10½ in.

TELEPHONES

Automatic Electric Co., 945 W. Van Buren St., Chicago, Ill.

683. *Architect's Specifications for Interior Telephone System.* A complete and short specification for the installation of interior telephone systems adapted to all kinds of buildings and uses. 4 pp. 8½ x 11 in.

684. *The Straight Line.* A booklet devoted to interior communication by use of private automatic exchanges and the P-A-X Code Calls. Description of switchboards, instruments and accessories. 38 pp. Ill. 5 x 8 in.

Stromberg-Carlson Telephone Mfg. Co., Rochester, New York.

304. *Inter-Communicating Telephone Systems. Bulletin No. 1017.* A pamphlet giving just the information required for the installation of intercommunicating systems from 2 to 32 stations capacity. 16 pp. Ill. 7¾ x 10 in.

TERRA COTTA

Atlantic Terra Cotta Company, 350 Madison Avenue, New York, N. Y.

425. *Questions Answered.* A brief but full description of Atlantic Terra Cotta and its use in buildings. 32 pp. Ill. 5¼ x 7 in.

551. *Monthly Magazine,* Atlantic Terra Cotta. February issue contains fine illustrations of the work of Giovanni della Robbia, 1469-1527, glazed in colors. 16 pp. Ill. 8½ x 11 in.

National Terra Cotta Society, 19 West 44th St., New York City.

664. *Standard Specifications.* Contains complete detailed specifications for the manufacture, furnishing and setting of terra cotta, a glossary of terms relating to terra cotta and a short form specification for incorporating in architect's specification. 12 pp. 8½ x 11 in.

666. *Color in Architecture.* An illustrated treatise upon the principles of color design and appropriate technique. 38 pages. Ill. 8½ x 11 in.

667. *Present Day Schools.* Illustrating 42 examples of school building architecture with an article on school house design by James O. Betelle, A. I. A. 32 pp. Ill. 8½ x 11 in.

668. *Better Banks.* Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, architect. 32 pp. Ill. 8½ x 11 in.

The Northwestern Terra Cotta Co., 2525 Clybourn Ave., Chicago, Ill.

96. *Architectural Terra Cotta.* A collected set of advertisements in a book, giving examples of architectural terra cotta, ornamental designs and illustrations of examples of façades, of moving-picture houses, office buildings, shops, vestibules and corridors in which Northwestern Terra Cotta was used. Size 8½ x 11 in. 78 pp.

NO matter how large or how elaborate a store front is to be, architects can specify Desco materials and construction with absolute confidence that the contractor's work will be satisfactory in every detail. Installation is simply a matter of assembling units so obvious in their use that any mechanic can do perfect work quickly and accurately.

The reason Desco construction fulfills the needs of each individual architect so perfectly is that, throughout our many years of manufacturing we have closely co-operated with capable builders. We have never made a change in design without the unqualified approval of practical architects. We have sought your suggestions and have profited by them.

Technical features such as provision for contraction or expansion, ventilating and drainage are all built into our product at the factory. Ample resiliency together with rigid construction where needed insures protection against glass breakage. Complete details and price list will be sent upon request. May we also refer you to Sweet's Catalog?

There is a Desco distributor near you

DETROIT SHOW CASE CO., 1650 Fort Street West DETROIT, MICH.

(175)

Desco METAL

STORE FRONTS

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

REFERENCE LIST OF BUSINESS LITERATURE Continued

TILE—ORNAMENTAL

The Associated Tile Manufacturers, Beaver Falls, Pa.

358. *Home Suggestions.* A new book in colors describing and illustrating the use of tiles in floors, walls, ceilings, fireplaces, garages, for exterior embellishment, etc. Full of suggestions. Sent to architects on request. 7½ x 10⅝ in.

359. *Basic Information on Tiles.* Book giving practical information on ingredients, processes, gradings, sizes, shapes, colors, finishes and nomenclature. Sent to architects on request. 7½ x 10⅝ in.

374. *Basic Specifications for Tilework and Related Documents. No. K-300.* This specification is prepared in a very systematic manner for the use of architects and builders. It is printed on one side of a sheet with facing page blank to receive memoranda. Various colored sheets make reference easy and simplify greatly the work of a specification writer in specifying tilework. 38 pp. 7½ x 10⅝ in.

375. *"Work Sheets" for Specification Writers.* To be used in connection with "Basic Specification for Tilework and Related Documents." 16 sheets 7½ x 10⅝ in.

706. *Glazed Tiles and Trimmers, Publication K-400.* An invaluable book for use in laying out glazed tile work. Details of standard tiles, mouldings, curbs, sills and other trimmers with illustrations of assembling for many uses. Free to architects and members of their staff only. 86 pp. Ill. 7¾ x 10¼ in.

TIME CLOCKS—See Clocks

TOILET PARTITIONS—See Wainscoting

TRIM—See also Doors and Windows

TRUSSES—See Building Construction

VARNISH—See Paints

VAULT LIGHTS

American Three Way Luxfer Prism Co., 13th Street and 55th Court, Chicago, Ill.

424. *Daylighting. Catalog 21.* A complete catalog on glass prisms for use in transoms, sidewalk and floor lights, skylights, etc., for lighting places inaccessible to direct daylight. Contains also measurements, specifications and other data required by designers. 42 pp. Ill. 8½ x 11 in.

VENTILATION—See Heating and Ventilation

VENTILATORS

The Burt Manufacturing Co., Akron, Ohio.

207. *General Catalogue* covering entire line of Ventilators, Exhaust Heads and Filters. Separate leaflets on each type of ventilator, vent and damper.

525. *The Great Outdoors Brought Inside.* In this book is a description of the new rectangular combination skylight and ventilator; the Burt fan ventilator for removing odors, fumes, etc., when atmospheric conditions interfere with the gravity process; and a table giving prices, dimensions, weights and gauges of iron of the Burt Ventilator. Some good general information about ventilators is included. 16 pp. Ill. 3⅝ x 6¼ in.

WAINSCOTING

The Vitrolite Company, Chamber of Commerce Building, Chicago, Ill.

648. *Toilet Partitions and Wainscoting. Architects Tile Bulletin No. 7.* Describing the uses of Vitrolite, its physical properties, details of installation and specifications. 32 pp. Ill. 8½ x 11 in.

WALL COVERING—See also Linerusta-Walton

Standard Textile Products Co., 320 Broadway, New York, N. Y.

111. *Sanitas, Modern Wall Covering.* Folio. Plates of color renderings of various interiors, with suggestions for the library, living room, dining room, boudoir, kitchen and church wall covering, using Sanitas. Size 11½ x 6 in. 15 plates.

112. *Sanitas, and Its Uses.* Booklet. Text and color illustrations of Sanitas as a wall covering, with tables for wall and ceiling measurements. Notes on sanitary character, cleanliness and durability of Sanitas. Size 5 x 7 in. 28 pp. 6 color plates and 2 sample sheets.

113. *Sanalining Sanitas Lining and Prepared Lining.* Folder. Notes on durability and cleanly character of the above three products. Size 3¾ x 6 in.

114. *Hints to Decorators.* Booklet. Instructions and specifications for the application of Sanitas, with notes on finishes and material. Size 5 x 6¾ in. 20 pp.

WATER HEATERS

Ruud Manufacturing Co., Pittsburgh, Pa.

567. *Ruud Gas Water Heaters.* Bulletins in filing folder describing instantaneous automatic water heaters for small homes and special uses, multi-coil automatic storage systems, automatic storage systems and tank water heaters. Details for connections, hot water service and specifications. 19 pp. Ill. 8½ x 11 in.

Ruud Manufacturing Co., Pittsburgh, Pa.

589. *Ruud Automatic Storage Systems.* Catalog of automatic hot water storage systems for domestic, industrial and commercial uses. Details, capacities, dimensions and other data. 24 pp. Ill. 6 x 9 in.

590. *Ruud Multi-Copper-Coil Automatic Storage Systems.* Catalog describing automatic hot water storage systems of large capacity for large residences, apartment buildings, hotels, hospitals, gymnasiums and factories. Details, capacities and dimensions for complete line. 32 pp. Ill. 6 x 9 in.

WATERPROOFING—See also Dampproofing

The General Fireproofing Co., Youngstown, Ohio.

646. *The Waterproofing Handbook* (Sixth Edition). A revised edition of this valuable book treating of sub-structure and super-structure waterproofing, cement and wood floor preservatives, technical paints and coatings and GF waterproofings, preservatives and their uses. 72 pp. Ill. 8½ x 11 in.

Security Cement & Lime Co., Hagerstown, Md.

726. *Waterproofing with CAL.* A circular treating of the integral method of waterproofing concrete by the use of Cal. Also specifications for use. 4 pp. 8½ x 11 in.

WATER PURIFICATION

The R. U. V. Company, Inc., 165 Broadway, New York.

606. *Ultra Violet Ray Sterilization.* Bulletins treating of water sterilization for homes, hotels, office buildings, hospitals, schools, industrial plants, breweries, ice plants, swimming pools, water works and other places. Ill.

WATER SOFTENERS

The Permutit Company, 440 Fourth Ave., New York.

105. *Permutit (Water Rectification Systems.)* Illustrated booklet. Describes all methods of softening water, including the original Zeolite process. For homes, hotels, apartment houses, swimming pools, laundries and industrial plants. Size 8½ x 11 in. 32 pp.

482. *Bulletin No. 1600.* This bulletin treats of the value of soft water in the house and describes the Wayne Domestic Water Softening System. 6 pp. Ill. 8¼ x 10½ in.

Wayne Tank and Pump Co., Fort Wayne, Ind.

687. *Water Softening and Filtration.* A valuable treatise on the subject of slow-acting and quick-acting types of water softeners and their application to commercial, industrial and domestic uses. The construction of and uses for Wayne Pressure Filters are also adequately described. 32 pp. Ill. 8¼ x 10½ in.

WATER SUPPLY—See Pumps

WEATHER STRIPS

The Diamond Metal Weather Strip Co., Columbus, Ohio.

616. *The Diamond Way.* A catalog of full size details showing the application of Diamond metal weather strips to double hung and casement windows and doors with complete specifications. 34 pp. Ill. 8½ x 11 in.

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

354. *Higgin Metal Weather Strips.* A booklet of considerable value to architects and builders on the use of weather strips. Ask also for the companion book on "The Reason Why." Each booklet 12 pp. Ill. 6 x 9 in.

Monarch Metal Products Co., 5020 Penrose Street, St. Louis, Mo.

512. *Monarch Metal Weather Strips.* The publication embodies all the suggestions for advertising literature made by the Committee on Structural Service of the American Institute of Architects. It contains a treatise on inleakage around windows together with description of Monarch Metal Weather Strips. Contains many detail working drawings. 48 pp. Ill. 7⅛ x 10½ in.

WINDOWS—See Doors and Windows

WIRE AND CABLE—See Electric Wire and Cable

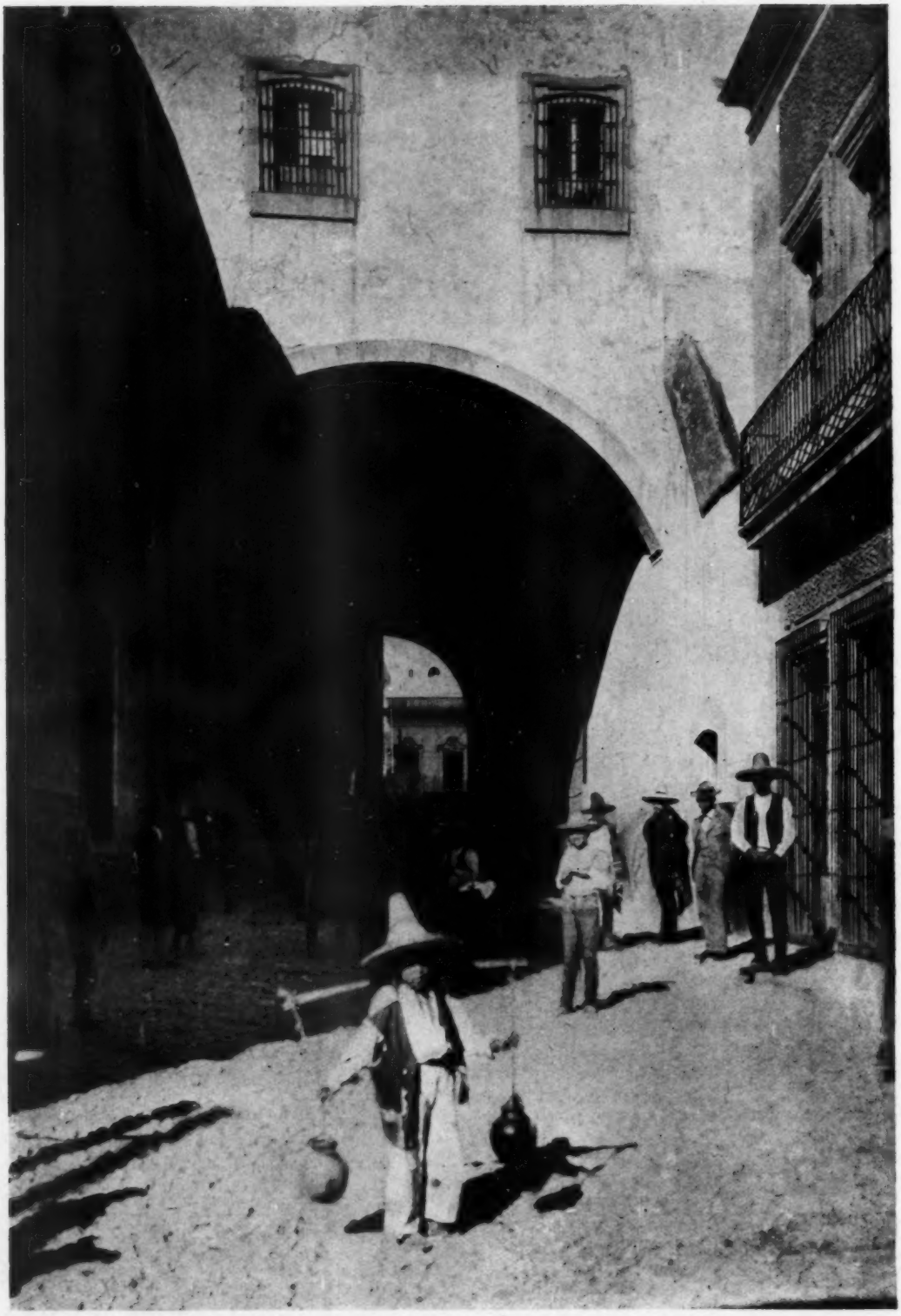
WOODWORK—See also Doors and Windows—Lumber

Curtis Companies Service Bureau, Clinton, Iowa.

663. *Keeping Down the Cost of Your Woodwork.* A book illustrating Curtis interior woodwork and built-in cabinets and fixtures designed by Trowbridge and Ackerman, Architects, New York. Colored illustrations and details. 16 pp. Ill. 7 x 9¼ in.

Hartmann-Sanders Company, 6 East 39th St., New York, N. Y.

334. *Catalog No. 47.* Illustrating Kell's Patent Lock Joint wood stave columns for exterior and interior use. 48 pp. Ill. 7½ x 10 in.



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STREET SCENE, ZACATECAS, MEXICO

(From "An Architectural Pilgrimage in Old Mexico")

XUM